THE
# SCHOOL JOURNAL
ORGAN OF THE DEPARTMENT OF PUBLIC INSTRUCTION AND OF THE STATE TEACHERS' ASSOCIATION.

Vol. 67. MAY, 1919. No. 11

## DEVELOPMENT OF PENNSYLVANIA HIGH SCHOOLS.

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THE educational system of Pennsylvania has undergone marvelous transformations since its humble beginning the 18th century. From the days when the denominations of the church were the dispensers of learning to the present secularized public school organizations, numerous social and legislative changes have occurred.

Our public high school system may be said to have begun with the academies, denominational or otherwise, for to many of them charters and appropriations were granted by the Legislature. Between 1784 and 1799 twelve of these academies were established; by 1829 fifty had been granted charters. The number seemed to correspond with the number of counties for each county had an academy though some had more than one. This was in keeping with the constituion of 1776 to 1790, which provided that a school or schools should be established in each county.

The semi-public nature of all the academies (62), established, from 1784 to 1829, except four, is indicated by the fact that they received grants of land varying from 500 to 10,000 acres or money appropriated by the Legislature in sums varying from $500 to $5000. Four-fifths of the schools received $2000 each. Two were aided by lottery. In 1810 the State appropriated $12,000 to encourage the building of academies. One of the conditions the academies were required to meet to receive a grant of land or an appropriation was the giving of instruction to a number of poor children. The number taught free varied in the different schools from three to ten. In the Reading Academy in 1832, $3000 was given on condition that four poor children be prepared as teachers. Smethport Academy, to receive an appropriation, required the principal to be a college graduate.

Even with financial assistance from the State, many of the academies failed because they lacked a proper foundation. Many of the academies fell to the grade of common schools and, therefore, could not be used for training teachers. A few lost their charter and a number were forced for lack of students to close their doors.

In 1838 the Legislature, supplementary to the common school laws, enacted a provision making appropriations annually for ten years as follows: "To each academy maintaining one or more teachers, and in which at least fifteen pupils shall be taught, $300. To each of said academies and female seminaries where at least twenty-five pupils are taught, $400; and to each of said academies and seminaries having at least two teachers and in which forty or more pupils are constantly taught, $500." The result of this enactment was a rapid growth in academies and seminaries throughout the State. In 1843 the State paid to sixty-four academies and thirty-seven seminaries nearly $40,000. The rapid multiplication of academies and seminaries and the pressure for finances forced the Legislature, in 1843, to reduce the appropriation to one-half the amount provided for by the Act of 1838 and the following year the appropriations were entirely withdrawn. This was the final step of retrenchment and was a sad blow to the new instituion. Many were completely ruined.

J. P. Wickersham says "the experiment of building up a system of higher education failed not so much on account of the want of a sufficient number of pupils properly prepared, as on account of the injudi-

cious application of the State's bounty, and its withdrawal just at a time it was most needed. Quoting Mr. Wickersham further, "It was a valuable undertaking in 1838 for the State to make an effort to build up a great system of higher education. It was the belief of the ablest and best men that Pennsylvania ever entrusted with the duty of framing laws that not only should instruction in the common branches of learning be made universal, but youth of both sexes should be allowed all practical facilities for entering upon that higher course of study necessary to develop and perfect the powers with which man is naturally endowed."

Notwithstanding the fact that the movement to build up a system of higher education by establishing academies and seminaries throughout the State in a sense had failed, we must not minimize the value of these institutions to the Commonwealth in the training these instiutions gave men and women for the various professions and business. In the words of Judge Chambers, "The influence of the Presbyterian seminaries was of inestimable usefulness to the inhabitants of Pennsylvania. In these same schools the young men of the State and some other colonies received a classical and scientific education that prepared some for high places in the medical profession, while others were educated preparatory to the study of the law and acquired deservedly the reputation and places of jurists, lawyers, and statesmen."

Though there was a lull in secondary education due to the withdrawal of State aid in 1843, the academies continued to operate with some success until a few years after the Civil War. From 1843 to 1870 we find in the Pamphlet Laws of Pennsylvania many enactments permitting trustees of academies to sell or dispose of the buildings. In the majority of transfers the academy and its equipment became the property of the school district and in a number of cases became the local high school.

Mention of high school brings out the fact that the academies were meeting with opposition. The first high school in Pennsylvania was opened in Philadelphia in 1837. Another was established at Attleboro, now Laenghorne, Bucks County, in 1836, but it had an uncertain career. A period of thirteen years in which there was little actively done in public high schools followed. By special acts of the Legislature, the following high schools were established: Lancaster, 1849, Pittsburgh 1849, Easton 1850, Erie 1856, Hollidaysburg 1857, Franklin 1859, Farmers' High School at State College 1854, Harrisburg 1866, Tioga 1869, Knoxville 1871, and Clearfield 1872. There were doubtless others.

The act empowering Knoxville to operate a high school gave the directors the authority to issue bonds to the extent of $3000 at an interest not to exceed 8 per cent. for the purpose of erecting school buildings. The act says, "it shall be the duty of the directors to provide one or more additional departments in which the high English branches, mathematics, and the languages may be taught and provide a competent teacher therefor."

A new step may be seen in the case of Easton which in 1866 was under the act of law required to keep up and maintain a central high school for the education of such pupils of the public schools as may possess the requisite qualifications as exercised by the board of control of the first school district in the city and county of Philadelphia and shall have the power to provide a normal department in said high school for the training of teachers. (Penna. Laws, 1866, pp. 287–.)

That the high schools established up to 1866 were regarded as part of the public school system by the framers of the common school law of 1834 and of 1851 would seem to be indicated by the following extract: "It shall be lawful for the board of controllers of common schools in the City of Harrisburg to establish a high school for said city, which said high school shall be open to pupils residing in any wards of the city aforesaid."

The fact that from 1860 until 1875, a period of fifteen years, little interest was shown in public high schools, was partly due no doubt to the active interest in normal schools for the training of teachers. These were privately managed institutions with the approval of the regulations for the government of the schools and courses of study adopted by the State Superintendent. In 1859, amid great rejoicing, Millersville the first normal school in Pennsylvania, was organized; Edinboro in 1861, and Mansfield in 1862 were reorganized as normal schools by the State. It is of interest to note that ten of the thirteen state normal schools came into existence between 1857 and 1878. Mention of the normal schools in connection with the high schools is necessary as a greater part of the instruction offered in these institutions was in the nature of secondary school work.

The Legislature of 1887 passed an act authorizing boards of controllers of school districts—of cities and boroughs divided into wards—to establish public high schools, to regulate admission to such schools, to appoint teachers with certain qualifications,

and fix salaries, to direct what branches of learning should be taught and what books shall be used in said public schools, and limited the term to ten months. The law of 1893 extended high school privileges to all cities and boroughs having a population of 500 or over.

Two years later, in 1895, the Legislature enacted a law that the directors of any school district may establish a high school and the state superintendent shall prescribe a uniform course of instruction which shall be taught in the high schools of each grade. Directors of two or more townships or school districts were given the power to establish joint high schools. This act classified the grades according to the length of the course of study and fixed the maximum amount of appropriation for each at $800, $600, $400. (The Legislature failed to make an appropriation.) In cities of the second class, the board of control of public schools shall continue and maintain at least one high school for the education of pupils of both sexes. Authority to establish other kinds of high schools and industrial schools was granted to cities of the second class.

A movement to centralize township schools taking its beginning in the Act of 1901 and requiring boards of school directors in districts where centralization was effective, to maintain and support a graded course of instruction gave authority to include a high school course of not less than two years. They were also required to furnish transportation to and from school to all pupils living more than three-fourths of a mile from the central building. An appropriation of $50,000 for two years was made for the encouragement and support of township high schools. That there was keen interest in establishing township high schools is evident by the growth in the number participating the second year this aid was granted. In 1902 two first-grade, twenty-eight second grade, and thirty-four third grade, while in 1903 six first grade, fifty-one second grade, and sixty-six third grade township high schools received State aid. This growth and interest had its influence on the Legislature of 1903 as it set apart $100,000 for the encouragement and support of township high schools. The Legislature of 1905 took another advanced step by giving children residing in school districts wherein no high school is maintained the privilege of attending a high school in another district at the expense of the home school district. The outstanding feature of this Legislature was to give every child of the Commonwealth the opportunity to receive high school instruction free. It has been considered most commendable. The Legislature appropriated for the two years for the support of township high schools $200,000.

To encourage larger and better high schools at less cost, the law of 1907 empowered directors of two adjacent townships or districts to establish joint high schools; to purchase real estate and erect buildings in accordance with the provisions of the act. The sum of $275,000 was appropriated for the encouragement and support of township high schools and a like sum for borough high schools. Many of the struggling boroughs were in need of money quite as much as the townships.

In 1909, 1911, 1913, and 1915, the State appropriated $450,000 for the encouragement and support of borough and township high schools, including joint high schools as herein defined, and $100,000 to aid in paying the tuition of pupils who attend high schools outside of their own district. The amounts appropriated during these years paid less than 50 per cent. of the maximum mentioned in the Act. The Department, however, was able to pay the maximum the past two years by applying the unused portion of the $1,000,000 appropriated to the State Board of Education. The amount appropriated in 1917 for two years toward the support of borough and township high schools including joint high schools was $750,000. No money was set aside to aid in the payment of the tuition of non-resident pupils.

The interest manifested by legislative appropriations was due in part to the high school section of the State Teachers' Association. The organization first met in 1905, being composed of the following persons: W. F. Long, J. C. Diehl, G. D. Robb, C. S. Davis, J. H. Humphries, H. W. Hastings, A. D. Eisenhower, and J. H. Moffatt. Through the efforts of this section the Legislature was influenced to provide for high school inspection. On December 15, 1907, two inspectors were appointed, a number which was increased to four in 1911.

These inspectors held frequent conferences with high school teachers and teachers of the grades. As a result a course of study for the elementary schools was prepared which virtually fixed a minimum requirement for entrance to high schools. In addition a manual for borough and township high schools was printed. Later, bulletins of programs of study, reports of inspection, etc., were sent out.

The effectiveness of the work of inspection is perhaps best seen in the changes of

the grade of schools. The first classification of the high schools in Pennsylvania in 1908 found 111 first grade, 211 second grade, and 425 third grade. There were in 1909 over 500 schools of the lowest grade. The high schools eleven years later show a marked change, not only in the increased number, but in the improved classification, for there were in the first grade 387, in the second grade 282, and in the third grade 318. Still more marked is the contrast when it is known that in 1908 practically all the third grade schools had a two-year course of study consisting of high school subjects and one year of elementary work, while in 1918 more than 80 per cent. of them have a three-year course of high school studies alone.

Another outstanding fact about high school inspection is that it has established a better relation between the normal schools and other higher institutions of learning. Practically all the colleges accept the graduates of the first grade high schools and many are willing to accept on condition the graduates of the second grade. The standards likewise are accepted by the Bureau of Professional Education in lieu of an examination. The high school inspectors, in other words, are back of the schools they classify and protect the boys and girls who graduate and desire to enroll in a college or follow a profession.

There is abundant evidence to show that the high schools have increased their scope of usefulness in recent years through the introduction of courses of study that touch life. Practically all the high schools of 150 pupils offer commercial courses. At least half of the first-grade schools have manual training in some form for the boys, and domestic science work for the girls. When to this the work in agriculture in connection with the forty-two vocational schools, and the organization of shops in the industrial schools in the larger centers of population, together with the well established junior high schools, is added, some idea of what the State of Pennsylvania is doing in high school education may be gained.

What a transformation within a single life-time! Aged men and women can still recall their school days in academies. They can remember the time when there was only one high school in the State. They have seen the system gradually develop, overcome all obstacles, and establish itself in the hearts of the people. Today a thousand high schools dot our Commonwealth bringing to all who wish, regardless of race or color, an education, non-sectarian, popularly supported and publicly controlled.

## PATRIOTISM THROUGH LITERATURE.

BY ELVA S. SMITH.

IN the months that have passed since the war message of President Wilson to Congress in April, 1917, there has been a wonderful rebirth of patriotism in this country. "I am ready to pay any price, gladly," wrote a young aviator to his parents on the day of his enlistment, and a few short months ago he paid in France the last full measure of his devotion to his country and to the ideals of liberty and justice for which he fought. The countless tales of bravery, heroism and self-sacrifice which have been coming to us almost daily testify that this has been the prevailing spirit in the new armies of America, and we have thrilled with pride as we heard or read of their achievements.

At home we have seen the people voluntarily changing their habits of living, renouncing pleasures and luxuries to which they had long been accustomed, submitting to irksome restrictions, giving generously, bountifully, of their knowledge, their time and their money.

The war with Germany is now ended, but "Peace hath [also] her victories" which are to be won only through the same unselfish devotion, the same unity of action that prevailed against a foreign foe. The fire of patriotism must needs be kept burning in time of peace as well as in war. This country cannot afford, for example, to revert to its former indifferentism toward the Americanization of the foreign born. The working of the universal military service act disclosed conditions, not fully, at least, realized before. An immediate problem was that of the foreign language soldier. One incident from the experience of a teacher in one of the camps will serve to illustrate the results of our former negligence in the matter of patriotic instruction.

"Romero," says the writer, "was having a time with his words. I asked him how long he had been in the United States." "Seven months," he said. "How long in Camp Kearny?" "Seven months." "Where did you live before that?" "Mexico." "*Old* Mexico?" "No, New Mexico." In New Mexico all his life, in the United States seven months! An American citizen by virtue of his birthplace, and America to him was a military camp set in the middle of a desert!

There are other problems, also, besides that of the melting-pot, which are as yet unsetlled and which will require for their true solution a high type of patriotism. The mistakes and failures of the past, how-

ever, are noted only to emphasize the continued need of patriotic training and especially of our obligation in this matter to the boys and girls of to-day, the men and women of the future.

It is not probable that these boys and girls will be called upon to give their lives for their country, however gladly they might do so; but they will be needed to live for it nobly. Mr. Hagedorn calls them "the hope of the world." A few short years and they will be "the mind of the [country]." When that time comes can they be trusted to carry a message to Garcia? Will they think "along the lines of duty, not along the lines of self-aggrandizement?" Will they be "strong to guard the right, repel the wrong?" Will they meet the needs of the hour with courage, conscience and vision? Will they be unafraid and of unswerving purpose in the continuing struggle against injustice and oppression? The answer to these questions cannot be given yet; but the loyalty of these men and women of the future to their country and their attitude toward the privileges and duties of citizenship are being determined in no small measure by the ideas and ideals which we are giving them now in their school-days; for, in the words of Mr. Wells, "What mankind becomes is nothing but the sum of what we have made of the Joans and Peters."

The definition of patriotism seems sufficiently simple, but the word does not connote precisely the same thing to all minds; so the first question, perhaps, that we should ask is what type of patriotism do we wish to inspire. It is not that which responds only to the beating drum and the marching battalion, nor is it the "spread-eagle" type, nor the kind that believes in jingo violence. It is not the patriotism which asserts that "political morality differs from individual morality because there is no power above the state"; nor that which says "the state has no conscience; the state can do no wrong." Neither is it the patriotism that believes that to love one's country above all others is necessarily to despise all others.

The patriotism which we would develop is symbolized by the Stars and Stripes, but it is more than an unreasoning sentiment for the land of one's birth or adoption. It is based on a knowledge of the principles for which the United States stands and it includes not only love of country, loyalty, and national pride; but also respect for law and a willingness to serve in whatever capacity one may be needed. There are four methods by which children are receiving or may receive this education in patriotism:

1. Through the unconscious influence of their environment. This influence is going on all the time whether we will it or not. It is constantly making its impress upon the boy and the girl and helping to mold their characters. Unfortunately it is not always ennobling—I need instance only the menace of alien ideas, of city slums and of housing conditions—and it needs, therefore, not only supplementing but frequently also correcting.

2. Through direct instruction. If patriotism comes from inspiration, it is not, strictly speaking, possible to teach it directly; but there are many opportunities for indicating the true perspective of events, for emphasizing national ideals, for pointing out the obligations of citizenship, and for cultivating a broader human sympathy, especially toward the foreigner in our midst. Direct appeals, except in time of crisis, are of doubtful value. It is sufficient to recall Kipling's "Flagflapper" and the disastrous effects of his talk to "Stalky & Co." on such little matters as "the hope of Honour and the dream of Glory, that boys do not discuss even with their most intimate equals." The remark, however, of a small boy concerning his teacher, "Gee, but she is one patriotism fiend!" quoted in an article in a recent number of the "New York Libraries," would indicate that there may have been some misspent effort in this direction.

3. Through service. Children exult in action and one of the fine things that has come out of the hideousness of the war has been the opening up of many opportunities for sacrifice and service on the part of the children. In his "Education and Life," J. H. Baker says, "Whatever you would wish the child to do and become, that let him practise. We learn to do, not by knowing, but by knowing and then doing." Formerly to many boys and girls patriotism meant only saluting the flag, singing "My country, 'tis of thee," or marching in a parade; but during the months of war they have shared in refugee and other Red Cross work, they have helped in Liberty Bond campaigns, in the food conservation movement, in the collection and preparation of books for the use of soldiers and sailors. This participation has not only cultivated a sense of responsibility and quickened the spirit of patriotism, but it has given them a feeling of personal relationship to their country unknown before. This training has been invaluable in its effects and the cooperation of school activities with the Junior Red Cross, the Boy Scout organization and other agencies, ought to be continued if possible in the years of peace, in this way opening up for children new forms of service as an aid in the development of an active, constructive patriotism.

4. Through literature. This method like the first is indirect, but it is not the less valuable because, so far as the children are concerned, the influence is unconscious and no immediate effects are discernible. Boys and girls read and enjoy their books, rightly enough, without considering whether they are fit to do them good and quite unaware of their ethical value. Whatever lessons there may be are absorbed in silence and the ultimate results are seen only in what the children grow to be. The reading may, however, be consciously directed toward definite ends on the part of the older person; and teachers, especially, merely through the power of suggestion, may control to a great extent the home reading of young people.

It is always easier when we can work along the lines of least resistance and at the present time we have an opportunity, such as we have not had before. The boys and girls have been aroused and inspired by the events of the war, and the opportunities of service, and there is not only enthusiasm for their own country, but an interest, hitherto unknown, in other lands and peoples. We want to preserve this enthusiasm, to direct and stabilize this patriotic impulse and make it contribute to a new international idealism. We may supplement other methods of doing this by the right choice of books; but we shall not get the results for which we hope, if we are satisfied to allow children to obtain their patriotic ideas from the cheap, commercialized product, commonly known as children's literature. I cannot but view with dismay the number of these books read by some of our boys and girls at a time when they should be all aglow with the big and vital things in the world. These stories are mechanically manufactured, they have no individuality, they are essentially commonplace, they often give false views of life; and, though one alone may seem harmless, when absorbed in large quantities, they are surely weakening to the mental and moral fibre alike. To be of permanent value books must possess literary quality; "they must be whole-souled, broad, mature in temper, however simple they may need to be in theme or manner." It is not the book of the hour, but the books of all time that breed high resolves.

Here, for example, is a boy who has run through the innumerable adventures of "Tom Swift" with motor cycle, motor boat and airship. What has he gained from the reading? Any new consecration to national ideals? Any incentive to nobler action? Any impression whatever that will be lasting? Here is another boy who has just finished reading the story of "Harold," perhaps for the second or third time, and he closes the book with those ringing words still echoing in his ears:

"The tombless shade of the kingly freeman still guards the coasts and rests upon the seas . . . and whenever, with fairer fates, Freedom opposes Force, and Justice, redeeming the old defeat, smites down the armed Frauds that would consecrate the wrong—smile, O soul of our Saxon Harold, smile, appeased, on the Saxon's land!"

Does he not see beyond the petty bounds of his own horizon? Has he not caught a glimpse of that vision without which the people perish?

We may not be able to determine just what books will be instrumental in the development of an individual boy or girl; but, at least, we can point out those most likely to be helpful. The extent to which they may be influential is not capable, of course, of exact proof, and it is impossible ever to tabulate results. Having sown the seed we must be content to let it grow and develop in secret. It is not well to be too curious about its progress, or seek, like the child in his garden, to dig it up to see if it is growing. We remember, however, Hawthorne's symbolical story of The Great Stone Face and we have faith to believe that he who "seeks and loves the company of great ideals and moves among them, soon or late will learn their ways and language, unaware take on their likeness."

The books which will best serve our purpose are those which present concretely and dramatically the qualities which we wish boys and girls to emulate. They are chiefly the old books, but the events of the last four years have given them a new significance. They lay stress on the old virtues—obedience and truthfulness, honesty and courtesy, courage and self-sacrifice. They teach anew

"the lesson plain
That Life may go, so Honour stay."

Any good literature which has a moral or spiritual appeal and which has its effect in the upbuilding of character, will make for the best also in citizenship; but there are two classes of books which seem especially adapted for this purpose: (1) Hero literature, including the heroes of history, the ideal heroes of the chivalric romances and the more modern heroes of service, and (2) Patriotic fiction, poems, speeches and songs.

Boys and girls are natural hero worshipers and they instinctively try to imitate the heroes whom they admire. For the purpose of inspiring the right kind of patriotism we need, however, a special grouping of our hero tales. "From childhood," said the former German war lord, "I have been influenced by five men—Alexander the Great, Julius Cæsar, The-

odoric II, Frederick the Great and Napoleon. Each of these men dreamed a dream of world empire. I have dreamed a dream of German world empire and my mailed fist shall succeed." The results of this dream, this ambition of world domination, fostered by hero stories of other times, are seen to-day in war-ravaged Europe.

Over against this boast of the Kaiser, let us place a quotation from an address of Lincoln: "Away back in my childhood, the earliest days of my being able to read, I got hold of a small book, Weems' Life of Washington. I remember all the accounts there given of the battlefields and struggles for the liberties of the country, and you all know how these early impressions last longer than any others. I recollect thinking then, boy even though I was, that there must have been something more than common that these men struggled for."

But the great struggle for human freedom was not begun in America. It has its roots in the far-away past, "It is illustrated by the blood of thousands of martyrs who lived and died before the great experiment on this side of the water." The splendid traditions of that older time, the later tales of heroic deeds and of exalted patriotism, are a priceless inheritance and boys and girls should be saturated with them, should absorb them as food and air, until a love of country and a hatred of treachery, and of political intolerance and tyranny become so much a part of their thought and feeling that whenever and however the call to service comes to them they will respond naturally, promptly and whole-heartedly.

Let the children read, also, of those six burghers of Calais putting their lives in jeopardy for the ransom of their fellow-townsmen. Give them the heroine story of Joan of Arc, "the light of ancient France," to whose courage and devotion is added the glamour of a mystic faith. "I come," she says, "on behalf of our Lord God to save the kingdom of France. It is for this I was born."

"Like a story from some old book, that battle
of long ago:
Shadows, the poor French King and the
might of his English foe;
Shadows, the charging nobles, and the
archers kneeling a-row—
But a flame in my heart and my eyes, the
Maid with her banner of snow!"

And so we come down through the centuries to our own heroes of the War of Independence and those of later periods—Joseph Warren and Israel Putnam, Washington and Lincoln. "Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery?" we hear Patrick Henry demand, and of Marion's band the British officer testifies, "They go without pay, they go without clothes, living on roots and drinking water—all for liberty. What chance have we against such men?"

We come too to Garibaldi, "bold in war" and his call to service in Italy, "I offer neither pay, nor quarters, nor provisions. I offer hunger, thirst, forced marches, battles and death. Let him who loves his country in his heart and not with his lips only, follow me."

We come to the heroes who have fought in this latest war, for the ideals of freedom and humanity; to the glorious victory of the Marne, of Château Thierry and of Mihiel.

Is it possible to read of these thrilling acts of heroism without a perception, however dim or inarticulate, of the lofty ideals and of the spirit of self-sacrifice and service which inspired them? Can one repeat those stirring utterances or rallying cries —"Make way for liberty!" "I only regret that I have but one life to give for my country!" "Better a drowned land than a lost land!" Joffre's "This thing has gone far enough" and the motto at Verdun, "They shall not pass"—without a surge of enthusiasm, a deeper sense of patriotism and a stronger realization of the high honor of living and dying for one's native land. Can one follow the banner of America through perils and successes from the days of Greene and Marion to those of Grant and of Pershing without believing with Cicero that of all human things naught is more worthy or more honorable than to "have deserved well of one's (own) country?"

The hero of olden days was generally a soldier, but times of peace, now, offer just as real opportunities for serving one's country as do those of war. The building of great bridges and canals and railroads, the redeeming of desert wastes by irrigating works are as truly adventurous as the deeds of the knights and paladins of old who, as Ragnar Lodbrok says, "smote with swords." It requires just as much courage to fight against the evils of economic conditions and civic corruption to-day as it did in other ages to fight loathly worms and traitor knights.

We have been told repeatedly in the months that have passed not only that men and money and munitions were needed, but that food would win the war, and ships, and coal. What was this but a picturesque way of saying that *all* loyal service was of value? Indeed, according to Secretary Baker, "The master heroisms of social progress are but aggregations of inconspicuous acts of self-sacrifice."

To our other hero tales, then, let us add

stories of everyday heroism, such as that of Captain Scott, master diver, as told by Francis Hopkinson Smith, and the lives of the great men and women of modern times who have given themselves in unselfish service—Edison, Wilfred Grenfell, Pasteur, Father Damien, Clara Barton, Florence Nightingale, Elizabeth Fry. The two collections of short biographies by Mary Parkman: "Heroes of To-day" and "Heroines of Service" are especially helpful in this connection. With these books one may use, also, poems of service, such as Leigh Hunt's "Abou Ben Adhem," Gilder's "Heroic Age" and "In Times of Peace," Browning's "Hervé Riel," and Whittier's "Hero,"

> "The Cadmus of the blind,
> Giving the dumb lip language,
> The idiot-clay a mind."

Of the patriotic fiction and poetry, it is unnecessary to speak in detail. There are a few short stories, not only patriotic in spirit, but possessing in addition high literary value, with which all children should be familiar. While many boys and girls will read these stories for themselves, they are particularly adapted for reading aloud. They include "The Last Lesson," and "The Renegade Zouave" by Daudet; Mrs. Ewing's hero story of "Jackanapes"; Edward Everett Hale's "Man without a Country," written in a time of crisis as an aid in promoting a just and true national sentiment, but equally as powerful now in the intensity of its appeal; and Hawthorne's "Gray Champion" with "its humbling lesson to the monarch and its high example to the subject. . . . Long, long, may it be, ere he comes again! His hour is one of darkness, and adversity, and peril. But should domestic tyranny oppress us, or the invader's step pollute our soil, still may the Gray Champion come, for he is the type of New England's hereditary spirit: and his shadowy march, on the eve of danger, must ever be the pledge, that New England's sons will vindicate their ancestry."

Among the standard books for the boys' and girls' own reading are many which, though not classed as patriotic stories, may also be used for this purpose—such books as Kipling's "Puck of Pook's Hill" and Kingsley's "Hereward the Wake," both so patriotically English in feeling, and artistic as well.

There is also a splendid store of patriotic verse from which to draw. We may include not only poems about America but those of other countries also. There are poems for the younger children as well as those for the older boys and girls; there are poems of abstract patriotism, martial poems, "Verses that smite the soul as with a sword," sonnets and stately odes.

And here again is an opportunity for reading aloud. "The poet's verse slides into the current of our blood." It stirs our emotions, and many children will understand the intellectual message and thrill to the inspiration of the lines who could not be persuaded to read anything in metrical form for themselves.

National songs, the great speeches of Webster, Edward Everett, Lincoln, and others, and the state papers of President Wilson may all contribute to the development of a true patriot.

Patriotic readers also have their use. They collect in one volume material from different sources and make it readily accessible and they are often suggestive to teachers; but complete stories or poems are usually preferable to extracts and, as reading-books for young people, their purpose is so obvious that it is apt to defeat itself.

I have not attempted to outline any program by grades because children differ so widely in their reading ability and their appreciation of literature, that accurate grading is almost impossible. Books for home reading need to be fitted to the individual boy or girl rather than to groups. But, speaking broadly, the simpler hero tales and legends should be given the younger children and, to the adolescent boy and girl, the battles of chivalric love and honor, the hero tales of service and books of the European war; in both cases this reading to be supplemented by stories and descriptions of life in different countries and by the patriotic fiction, poems and other material mentioned.

There are other classes of books which also serve a patriotic purpose—those on gardening, food conservation and similar subjects—but that, as Kipling says, is another story. And I do not wish to imply in any way that the reading of children should be limited to the particular types of books discussed. I only want to plead that, in connection with their other reading, there may be at least some literature of an inspirational character.

Reading, such as is here outlined, should result not only in greater love for one's own country, but there should be numerous by-products as well. It should provide a background helpful in the more formal study of history and civics and supplement other forms of training for citizenship. It should create a friendship for the best books, give some appreciation of literary values, and lead to new lines of reading. It should be an aid in the problem of Americanization by its recognition of the literature and the aspirations of other peoples as well as for its emphasis upon the

ideals of democracy. It should give also those fundamental ideas of justice and liberty, without which there can be no harmony among nations; a greater human sympathy, a wider horizon, an international outlook.

Its primary purpose, however, is to develop character and awaken a true American spirit. The European War has been fought "to make the world safe for democracy"; it is for us who work with children to do our part in making them fit for this New World in which they are to live and serve; our part to see that they are educated to meet the responsibilities some day to be theirs, that these dead who have fought the war of democracy, who have given the supreme proof of patriotism may not have died in vain. The message is not to the soldier only, but to us all:

"To you from failing hands we throw
The torch—be yours to hold it high;
If ye break faith with us who die,
We shall not sleep, though poppies grow
In Flanders fields."

## THE WAR AND SCIENCE TEACHING.

BY DR. S. C. SCHMUCKER.

WHEN in September Prof. Croman asked me to write this paper, I think it was with a different feeling in his mind from any he now entertains. At that time we were still overwhelmed by the sense of an impending calamity the outcome of which we felt sure *must* be right, but whose duration was feared to be a matter of perhaps years.

Under these conditions we were intensely sensitive to our shortcomings. We knew that as a nation we had been apparently utterly unprepared for war. We even doubted whether we were of the material from which great fighters could be made. We had been told so long that we had almost come to believe it, that as a nation we were a lot of money-grubbers without any vision or purpose, our outlook entirely eclipsed by a dollar held so close to the eye as to blot out the universe.

Opposed to us was a nation whose educational system we were inclined to look to as the highest shoot of the pedagogical tree. We had studied her schools and longed to be able to imitate their thoroughness and their attention to detail. We had copied much, though we regretfully realized that the copy was quite different, and that our student body could not be made to submit to the discipline on which the German was fed from the cradle. We had, in addition, an unbounded admiration for the efficiency in manufacture and commerce which was the result of that training. We saw the markets of the world flooded with articles "Made in Germany," and the commercial agents of the great German houses going to every corner of the earth and spreading the tidings of German commercial efficiency and success.

Since then matters have changed. We have found in the first place that we were physically and spiritually far better prepared than we knew; that a whole nation was ready at a stroke to devote itself unreservedly to the winning of the war. Our boys, called from every corner and every rank of life, came at once cheerfully and earnestly to train strenuously for the work. It was the belief of the world that a soldier could be made only by at least a year of strenuous training; and that in a nation as unaccustomed to war as we, it might take more time.

How mistaken we were! In June last it was my good fortune to be sent by Mr. Creel's division to work in a camp. I then saw one division of men entrain at the rate of about three thousand a day. The men took to their cars without vociferous shouts, and clearly with serious determination on their faces. Their most evident purpose was expressed in the line of one of their favorite songs, "And we won't be back till it's over over there." Permit me to read from a document, a copy of which lies before me, a document written concerning that same division just five months later:

"Now that its part in the action north of Verdun is finished, the Division Commander wishes to take occasion to express his deep appreciation of the skill, endurance and courage shown by the officers and men of the Division, including both staff and line, in a most difficult and prolonged fight.

"Everything was opposed to our success. We had a most determined enemy in our front, and one skilled by four years of warfare, whereas this was the first real fight of our division. On most days the weather was bad and the ground difficult, added to the fact that the fighting was largely in woods. On account of the woods, ravines and dampness, gassing of our troops was easily accomplished and full advantage of this fact was taken by the enemy to whom the use of gas was an old story.

"Without exception the organization of the division and their commanders responded heroically to every call upon them and at the end of the fight we had not only gained our objectives, but we held them and turned them over to our successors. We advanced some eight kilometers through the enemy's trenches, and captured over 2,100 prisoners, seven cannon, about 200 machine guns and a large quantity of miscellaneous military property. We had the pleasure of seeing two hostile divisions withdrawn from our front, one of which was composed of some of the best troops of the German army. On many occasions captured prisoners stated that our attack was so rapid and our fire so effective that they were overwhelmed and had nothing to do but retire or surrender.

"In this brief summing up of the results of its first fight the Division Commander feels that every officer and man participating whether in planning or in executing, should feel a just pride in what has been accomplished. This is but repeating the praise that has been bestowed upon the division by both

American and French Superior Commanders."

In the face of testimony like that, and I am sure this division did not surpass the high excellence of the entire American soldiery in every part of the field, it is folly for us to talk of these boys as the victims of a false and foolish scheme of education. They are the product of the American school system, and we are, and we have a right to be, intensely proud of them, and we need not be too modest to say we are proud to have had a hand in the making of them.

Contrast with this the truth of the matter on the other side. The German army was a magnificent machine, with the common soldier a mere cog in the wheel, the pawn with whom the officer played the game. While everything was in their favor they seemed irresistible. But in reverse their morale utterly broke down, and with defeat the army entirely collapsed, and returned to civil life a turbulent, traitorous mob. Add to this the cowardly and brutal treatment this army gave to the civilian community in the country they occupied, and the picture is complete. And this is the consummate flower of the German system of education which we so much admired and so little understood. We surely have little to learn from them except how not to do it.

The training in politics and in commerce proves itself to be as little to be desired as the military. Germany has failed as signally here as in war. She has shown herself to be entirely willing to use her commercial messengers to undermine in time of peace the countries to which they go, and to use their highest ambassadors to head and arrange their treasonable work. Surely here, too, we see chiefly what to avoid.

Coming back, then, to our original problem, but seeing it in its new setting, the question becomes this: "What were the strong points in our training, and how may we best emphasize them?"

I think first of all came the splendid individuality of our boys, who could take commands and carry them out with accuracy and promptness, and who, in the absence of a commander could work on their own initiative. Congressman Fess, whom we all so well know and so heartily admire and love, told me what a French general said to him about our boys. "They are the best soldiers in the world—and the worst. The best because they know no fear—and the worst for the same reason."

Let us then carefully safeguard everything that makes for development of the individual and never let him get lost in the general treatment of the mass. Let us foster every talent and turn in the right direction every purpose. A strong bad boy only needs to face around to be a strong good man. Let us not expel our troublesome boys; let us win them.

Second: Let us carefully foster everything in the course that teaches a pupil to think for himself. Diminish rote recitation to the barest essentials and stress the branches and aspects of branches that require the pupil to draw deductions from the thing he reads—and very particularly from the things he sees. To me, of course, this means especially training in the observational and experimental sciences.

But in these sciences we must not forget to make the pupils alive to the great generalizations. Their minds must expand. They must stretch to the borders of a known universe from whose observed confines light takes five hundred years to reach us. They must gaze back over the abyss of time to comprehend the hundred millions of years that have gone to the shaping of the globe on which we dwell. They must focus their observation on the drop of water in which a myriad forms may be born, live their puny lives and pass away. They must gaze back with clear vision and see whence they themselves have come, in order that they may understand how magnificently they have developed and how vast are the hopes for the future. Fears as to the theological implications of these teachings may safely be left to consort with the mediæval fear of teaching that the earth is round and that it is not the center about which all the other heavenly bodies revolve. If the teacher himself is reverently religious and his life is clean and honorably lived in the sight of all men, he need have little concern lest his pupils be led from grace by his teaching of the truths of science.

In the third place, we must not neglect the humanities. I do not mean by this that every pupil must study Latin, though I have no regret for the time I spent on that now neglected, even despised, instrument of culture. What I do mean is that the steady march of the human mind is the broadest subject man can consider. For practical purposes we may need only the result, the formula. For real human broadening we need to know the steps by which men reached his place in civilization; to see how the formula is derived. So let us teach the widest appreciation of literature, of course, particularly in English. Let us try to impart to them a broad outlook over the history of the whole world, of which we have so suddenly become a vital factor. Let us not be troubled because only the specialist can make that study deep as well as wide. Dear old Doctor Edward Everett Hale, in speaking one time at our institution, said concerning the Chautauqua Reading Circle, "They tell me it is shallow. What must the angels in heaven think of the knowledge of all of us?"

I think it is clear that we are going to add to our already moderate care of the physical side of our pupils. We have vastly improved the hygienic conditions in most of our school buildings. The rest must fall rapidly into line. We must give more physical training—not necessarily along military lines. Indeed, I hope the results of the peace conference will be such as in a few years to make military training the acquisition solely of the members of the International Police System to which it will be a high honor to belong. The rest of the world may then leave to this professional group the dealing with a recalcitrant people. But we want the vigor that comes from abundant exercise under inspiring lead-

ership in the open air. We want it for girls quite as much as for boys.

One more lesson, I think, the war will have taught us. Never before has a big body of men been so carefully held from the bestiality of a loose sex life. Our soldiers will come home with a new outlook on the question of the essential relation between man and woman. Of course, some of them will run to the wilder excess from the restraint under which they have been held. But the body of them will have gained a new thoughtfulness. They will want their younger brothers and sisters better taught than they were in these realities of life of which we used to be so fearful of speaking. What is not a fit life for a soldier is certainly not a fit life for an American man or woman. To the teacher in Zoology comes a splendid opportunity in this matter. He begins so far down in the kingdom, progresses so slowly to the mammals, sees reproduction in such simple forms at first, that his way is easy. When he comes, at the end of his course to man, there is little left to explain, except that the ideals of the human creature must be set far above that of his relatives in the animal world, or he forfeits his high place, and becomes lower than they.

Even for those who do not teach zoology or physiology, the opportunity must be made by any teacher strong enough to command the respect of his pupils, to set their ideals on a high plane. Personally, I try to set this ideal before my own pupils: "Boys, when the time comes for you to ask a young woman, who has won your heart, that she share her life with you, I trust you can say to her 'I have little money laid aside, but I have a decent education, I have ambition, I have health and I have a job. Besides, I have kept myself clean as I ask you to have kept yourself.'"

"Girls, when the time comes that a man shall ask you to share your life with him, I hope, if your heart responds in his favor, that you will ask him, 'Have you kept yourself clean for this day as you ask me to have been clean?' And if he replies, 'I am sorry to say, like most men, I have sown my wild oats, but since I know you I have absolutely cleaned up,' I hope your heart will revolt and you will reply, 'Then find for yourself a wife who has also cleaned up. It is all you deserve.'"

These seem to me to be the main lines of the changes of emphasis most likely to be made. The sort of revolutionary changes which would have been necessary if the product had proved worthless will never be needed. The defects are those we have long known and on which we have been long working. We have already accomplished much. Our product has stood the acid test. A few people see the minor blemishes. Let us thank God for the great worth of our Young American Manhood, and go on with new zeal and more earnest effort now that we see that our main trends are good. Let us not, however, be so filled with self-satisfaction as to lessen our efforts. Let us be filled with the divine longing to do well, better.

## STARS AND STAR STUDY.

BY J. P. MCCASKEY.

THERE are not a few people in the world like the practical old lady who thought the moon of great account for it shines at night when it is dark; but the stars are of little use, and for the sun she saw no use at all. It shines in the daytime when there is plenty of light and it is not needed. If you want to spring a practical joke upon an audience almost anywhere, or to strike everybody dumb at a teachers' institute or in a class of graduates from almost any high school, college or university, ask how far it is to the moon, how far across the moon, and for a clear and simple explanation of the phases of the moon; or how far it is across the sun, and the cause of eclipses of sun and moon; or the difference between planet and star, their relative importance, sizes and distances. A few men in successive generations, through instruments devised and the science of mathematics developed, have learned and are learning amazing facts of which the reverent patriarchs, prophets and wise men of old know nothing. What science can match modern astronomy as a school of reverence? Here is a table spread for the very sons of God. But we care little for angels' food like this either for ourselves or for our children, though it meant blessing to distant generations.

There was a time when wise men believed our earth the center of the universe, the habitation of all human life and the chief care of the Creator. We are getting over that narrow view of God's vast plan, and there are those who to-day stand in mute awe and wonder and reverence and gratitude as they look upward to the stars and think of infinite space and world upon world without end. This mighty world of ours now passing through a tremendous experience unexampled in its history—in its slow progress towards better things—that has cost the lives of many millions of its inhabitants and the destruction of many billions of its treasured possessions—is it but one of millions of worlds larger and smaller, older and not so old, better and worse, wiser and less wise? What suggestion more probable? What fact more amazing?

When we look into the sky of a cloudless, moonless night and think of the incredible number of the stars, and their awful distances from us and from one another—above us, below us and all about us in the Universe of God—we may well be stunned, overwhelmed. We ought to be, indeed, as we see how "the heavens declare the glory of God." Impressions here are often weak and shallow and soon lost—for a man is as his thoughts are—or they are deep and lasting, ever deepening as we ponder the mystery, the immensity, the mighty aloneness, aloofness, the physical weight and power and motions of stars by millions like our sun, each, it may be, with its retinue of planets, one or more of them inhabited by beings not unlike ourselves. What millions of inhabited worlds this would mean,

and what countless billions of beings more or less thoughtful and intelligent!

"Abraham saw no brighter stars than those that shine for thee and me." Nor David, when he guarded his sheep through the splendid Syrian night, and felt the beauty and sublimity of the heavens that doubtless his father Jesse had made to his poet son an open book. I like to think, too, that his mother—who must have been a rare woman to have had such a son—may also have been one of his best teachers. These men saw the same stars and the same star groups, in the same relative positions, that shine for us, and if they stood with us to-night it would be to them the same old sky of fixed stars, just as they would see to-day the same old sun and moon that have been shining in yonder sky for millions of years. Is there anything to quicken interest in a thought like this?

We picked up a story of sea service in the late war, and come upon this: From the bridge one saw the black line of the forestays and the thin black line of the foretop stays swinging slowly across Orion's Belt. Just a point over the starboard bow was Sirius, like a diamond with red and blue rays. The junior liked him best of all the show. Those two end ones were Betelguese and Rigel, and in line with them up there were Castor and Pollux. That red fellow at the end of a V of fainter stars was Aldebaran, in the Hyades. That fellow lower down was Procyon, the Little Dog, and just above the horizon was Regulus. You could always tell him by the sickle of which he forms the handle. Capella there was a handy star and 'way around to the south'ard one could make out Canopus. With these two, for instance, and a fairly sharp horizon, we might get a decent fix. Of course, one knew the Dipper, and from the two pointers one could make out the North Star. "Now, I'll show you how close she is to true earth," said the junior, and when he had moved the arms of the pelorus to correspond with the ship's compass and had set the pelorus at true north, you looked through the sights and saw Polaris, the North Star, in line. Very good. They need the stars at sea, and use them all the while.

The Bible drew my attention to the stars when a mere child. We had the good fortune to live in the country, and as little fellows were proud of our new house and big barn. One evening a cousin who was perhaps twelve years old, and a pupil at Oak Hill Academy, was telling us as we looked to the brilliant stars—I shall never forget that night—of the wonderful things he had been hearing at school. I was perhaps eight years old, and had never thought of size or distance in connection with stars. Something suddenly suggested size. "How big are they?" "Oh," he said, "about as big as a bushel basket, I guess—and some of them may be as big as your barn!" There was a shock of surprise! As big as our barn—utterly incredible!

We had, sixty years ago, Supt. George R. Barr, an eloquent man and an enthusiast in astronomy, in charge of the schools of Lancaster. In one hour that man gave me impulse for a lifetime. General Ormsby M. Mitchell, who died at Beaufort during the Civil War, raised the money for an observatory at Cincinnati by a series of wonderful lectures published in three volumes during the fifties. I was blessed in getting these books and some day I hope to thank this good man for that helping hand.

I thought in those days that the telescope could get a disc on stars, and the more powerful the instrument the larger the disc. Here was shock No. 2 in astronomy. What was my surprise when I learned that no telescope ever made can show a disc as large as the head of the smallest pin for any star, not Sirinis or Vega or Arcturus! All you see is a gleaming point of light—because of its awful distance—though the diameter of the star may be millions of miles. Shock No. 3 was in the mathematics of astronomy, when Newcomb tells us: You may blindfold an astronomer, put him on an outgoing ship and sail steadily onward, keeping him ignorant of distance, direction and time for weeks or months, then land him on any coast anywhere, give him one clear night, and his mathematical tables, and the necessary instruments for observation of the stars, and by morning he will tell you, within two hundred yards—less than one-eighth of a mile—where he is on the surface of the earth! Are these facts that should be of interest to live people in the schools, teachers and pupils alike?

Dr. Higbee once said, "I can make a bee." But by the time he had the bee well at home in the field of red clover he had made the earth with its air and water and plant life and changing seasons, which meant also the sun with all its light and warmth and color. He needed the solar system for his bee. So you or I may say, "I can make a man." But when we have made him, he needs a planet like this for his home, and that blazing sun as it is and as far away as it is, no doubt, that such planet may become his training school for immortal life. I see no other reason for the creation of such a planet, equipped as it is, in such a solar system, so vast and wonderful, than that man, great as he is or as God means him to be, should come into existence upon it for his first course of training on the way of eternal life. If this be so, is it likely that other planets in our solar system may be so inhabited? It may be true of Venus and Mars. Is it likely that millions of other planets throughout the stellar universe may be so inhabited? Why not? Does God make anything in vain?

Wherever there is a glowing sun planets have doubtless evolved from the original fire mist. Our sun is believed to be an average star. Many other stars are of greater size and may swing twenty or thirty planets, very many of them inhabited for millions of years, while our earth can claim but thousands of years of such habitation. These may long since have done with wars and rumors of wars and look back to those distant eras as a barbarous past. We are learning slowly here on the earth, and, as has been said, are probably a lately peopled planet. Into our world a God came to live and die for men two thousand years ago. He may have died in ten thousands worlds or many times ten thousand in the infinite past.

Who will estimate the blessed uplift the example and teachings of Jesus Christ have given to our human race in these two thousand years? What will our world be two millions of years hence under the ever-growing influence of his perfect life and teaching? What may other and older worlds have grown to be?

Some months ago there was a call over the phone. A man from Maine, who was on his way to a Virginia camp to visit his son, said he had heard that I was still alive and that he had stopped at Lancaster to see me. When he came in I had no recollection of him. "Did you graduate from the boys' high school?" I asked. "No." "How long were you in the school?" He gave me these facts: A part of the year 1882–3. I was a poor boy, an orphan, about thirteen years old, and was having a pretty hard time of it. They made me go to school, but after several months I ran away to a farm, and they did not come after me. I have always wanted to see and thank you for what you did for me in those months by your morning talks to the boys and in giving me my hobby of astronomy. When I was in the high school the transit of Venus for 1882 occurred. You made the boys get ready with their colored or smoked glasses to watch the transit, made us understand what it meant, and that it occurs but twice in the century. Our interest was aroused. We wanted to see it, and we saw it—the planet Venus, nearly 8,000 miles in diameter, nearly as large as the Earth, rolling slowly like a very small black marble across the face of the sun, but many millions of miles this side of it. It made such an impression upon me that later I became interested in the heavens. When I went to Maine, married, and was doing fairly well in the automobile business I built myself a small observatory and have now in it a five-inch telescope. I belong to a club of a hundred amateur astronomers who are studying the multiple stars. I know the astronomers of Harvard and others. I owe it all to you, and I have long wanted to come here to see you again, and to thank you. You set me going.

We had a very pleasant chat, and I was delighted to know that the stars had so large a part in the real life of this good man.

Mr. William Strong writes an article in *Popular Astronomy* on "A Three-inch Telescope" which will be suggestive in this connection. His school advantages were limited. Yet, like all Yankee boys, he was inclined to pry into matters other than the mere mechanism of the tools with which he worked. One day he borrowed an old astronomy from a more fortunate friend who had gone through college. In it he saw something that he did not believe to be true. This prompted him to look farther. He next got hold of "Burritt's Atlas of the Heavens"; later, in 1878, the year of its publication, he bought Newcomb's large "Popular Astronomy." This latter seemed a piece of foolish extravagance at the time, but not for long, for he soon had captured about all of the constellations, the first and some of the second magnitude stars, the great belt of the zodiac, all the visible planets and the many other objects of interest visible to the naked eye. By this time he had quite a family on his hands, as well as a farm to manage. But he thought all the time that he knew "quite a lot of things" about astronomy; hence in addition to his agricultural journals he subscribed for "The Sidereal Messenger"—took it for many years, and now has the files where he can put his hands on them at a moment's notice; and he has a pile of "Popular Astronomy" also.

But that large astronomy told of so many things that he could not see that he became uneasy. He had occasionally seen articles by and about Dr. Lewis Swift and his comet work, so he wrote to him at Rochester in 1879, and asked him if he would look up a good, small telescope, to cost not over one hundred dollars. Dr. Swift at once replied and his letter was so kind and encouraging that to this day to read it makes this man's heart beat faster. For years afterward the good doctor would write now and then to call attention to some phenomenon soon to be observable with a small telescope.

When in due time the telescope came, the owner thought that he had about "the whole thing." He at once unboxed it, set it up, and as Jupiter was high in the south, he lined the tube upon him. He had never looked through such a thing before, but knew what he ought to see; so when the great planet with its equatorial markings and satellites flashed upon his vision, it almost took his breath away, and he felt bigger than Columbus when he sighted land! The comet eye-piece was just the thing for Albireo, in the foot of the Northern Cross, the glorious star clusters, and some of the irresolvable nebulæ, but it was at its best, of course, when used on comets. So he sent right away to the "Science Observer" for its comet circulars, and they have been coming ever since. These, with the comet ephemerides in *Popular Astronomy* are of so much practical assistance, that a telescopic comet must be in a terribly cold place, and a great distance out in space, if the owner or his wife cannot sweep it up in short order, to follow it night after night across the trackless, star-lit fields.

Some of the things that can be done with a small telescope have been mentioned in the articles referred to, but there are many more, and there is no end to the joy it can bring to the individual, the family, the district school, the neighborhood, the Sunday-school, the high school, the seminary, the college. During the past twenty-five years this instrument has been used many times in all these ways, and because of the work it was seen to do, other instruments have been purchased. But does it pay for farmers to bother with such things? Yes, yes, a hundred fold, if one is so to get a broader view of life. In our case the farm has not been neglected, but has proved eminently successful from the standpoint of the dollar, while at the same time this astronomical work has given untold joy to hundreds. The study that it stimulated has been of great value, too. The writings of specialists in astronomical fields can now be well understood, and thus we can keep up with the recent great advances in "the noble science." The writings of the world's great poets take on deeper

meaning, as Tennyson in a reference to Orion, "A single misty star, which is the second in a line of stars that seem a sword beneath a belt of three." So Mr. Strong feels that he has many reasons to hold up both hands for the good, small, tripod-mounted telescope—for high schools, for all schools, and for everybody. "Astronomy With an Opera Glass" is a good text-book. And "Astronomy" with no glass at all is a treasure of great account.

"For many years," says Thomas Carlyle, "it has been one of my constant regrets that no schoolmaster of mine had a knowledge of natural history, so far at least as to have taught me the grasses that grow by the wayside, and the little winged and wingless neighbors that are continually meeting me with a salutation which I cannot answer, as things are. Why did not somebody teach me the Constellations, too, and make me at home in the starry heavens, which are always overhead, and which I don't half know to this day? I love to prophesy that the time will come when the schoolmaster will be strictly required to possess these two capabilities, and that no ingenious little denizen of this universe be thenceforward debarred from his right of liberty in these two departments, and doomed to look on them as if through grated bars all his life."

But, some one says, even if we could make the time, we are not prepared to teach the stars, because we do not know them. Then learn them. Much of that is an easy and delightful task. It is not a formidable undertaking, when once you have begun the work, to locate with certainty from fifty to a hundred fixed stars and constellations. And the planets, "the wanderers," you can pick up from any good almanac, and you will enjoy it so much when once begun, that it will be no task to keep ahead of your pupils—you will all be working pleasantly together. The labor of preparation for the first few lessons will occupy a few evenings, until you get fairly started overhead, and after that the subject will take care of itself.

We established a Star Club at our Lancaster Y. M. C. A. nearly forty years ago, meeting once in two weeks, to which everybody was invited. Subjects were assigned to six or eight members, upon which papers were read. These included matters connected with the solar system. I gave at each meeting of the club such list of stars and star groups as I had given for some years in the high school, without text-books, numbering each addition to the list, with lines of direction and distance and diagrams, and quizzing the large class as to what they had located in the heavens. After the class work we went star-gazing, and in five or six months we had covered the list of a hundred and more stars and constellations in such manner as to afford gratification for a life-time to nearly all the members of the class. We had neither books nor apparatus, except those who were giving instruction, only a lead pencil and memorandum book for notes and numbered star list and lines of direction and distance in simple diagrams.

None of us knew much about Astronomy, the superb science, but that was reason why we should learn something of what was always making its challenge to careless indifference and brutish ignorance. And some of us had the good fortune to be born in the country, on the farm, and to have lived in childhood under the stars that we could not forget. In these modern days the well-lighted city shuts out the glory of the heavens from the vision of the child, unless attention be especially directed to the stars.

The Star Club of 1879 and 1880 was a unique organization, and set very many people in the county and in the state to looking into the heavens and recognizing stars and constellations by names that soon became familiar, for reports of the proceedings, carefully prepared, were published in the local papers and in THE PENNSYLVANIA SCHOOL JOURNAL. Many refer to it yet as "the time when they began to look at the stars." Star-gazing was always part of the work. I gave from evening to evening a list of 125 stars and star groups. Many of these names were as familiar to the wide-awake lads of the high school as were those to which they answered at roll-call. As I have said, we had no text-book. We had no class in astronomy. But we had the boys, the sky, and we had the joy of it.

And very many of those old boys never forget. Only a year ago one of them who has since then been on duty far and wide upon sea and land, who has for forty years been in glad and familiar touch with the stars, and who has recently been in charge of the military department of one of our great universities, told me that as he was strolling about one night he met the president of the institution. They fell into conversation and the latter spoke of the relief he had at times in coming out under the stars of a clear night. They began to talk of certain conspicuous stars. The officer named familiarly stars and constellation then overhead, and talked quietly of them as of old acquaintances, and so on. The president heard him in surprise. "Why, where did you learn that?" he asked. "I do not think there is a man in this great institution who can do what you have just now done. Where did you learn it?" "In the high school." "What high school? I never knew one that taught astronomy in that way!" "In Lancaster, Pennsylvania. We didn't have any text-books." No, they had their lists and their diagrams copied from the blackboard and the open sky itself for observation and study, simply as a glad feature of their school life, much as they studied practical botany—but in this the text-book was essential in connection with the out-door work.

When the Star Club was holding its semi-monthly meetings in the crowded lecture room of the Young Men's Christian Association I brought to the Fulton Opera House—with all their apparatus for illustration on a grand scale—two of the most noted lecturers of their day on astronomy, Henry W. Warren, author of the delightful book, "Recreations in Astronomy," and Richard A. Proctor, the distinguished author and astronomer of England, who was then lecturing in the United States. Both lectures were enjoyed by large and appreciative audiences. What audience

could be too wise or too great for an intelligent discussion of the mechanism of God's universe? If there had been assembled in Fulton Opera House on these nights the thousand men, wisest and best, most capable, and most eager inquirers after truth the world has known in all its ages, they would have heard with deepest interest and wonder, the story of the astronomer, as to what has been discovered and is now known to be true of the Stellar universe. Think of Abraham and Melchizedek, Moses and David, Pythagoras and Plato, Paul, John of the Apocalypse, Martin Luther, Shakespeare, Copernicus, Dante, Michael Angelo, Columbus, Herschell, Humboldt, Gœthe, Tennyson, Scott, Carlyle, Victor Hugo, Agassiz, Longfellow, Lowell—the wise men of the East and the wise men of the West—all gathered into one audience, eager to hear the truth which the sublimest of all material sciences has thus far established! That were an audience indeed! worthy a subject of such magnificent proportions.

Bishop Warren, in a letter after receiving a pamphlet copy of the Star Club, said: "I received my first lessons in astronomy before I knew the four fundamental rules in arithmetic. These lessons I have never forgotten. They have made me feel at home wherever I have turned my face to the skies, though I was on the great ocean, among the Alps, on the Pyramid, or under the clear sky of the East, where God, seeking to lift Abraham up to his own lofty thought, said unto him, "Look now towards heaven and tell the stars if thou be able." Perhaps I did not thank the district school teacher as I should have done at the time, but I have blessed her ever since and am glad to say any word of encouragement to any that are following in her steps."

To think intelligently of the stellar system we must first know what is meant by our solar system—our sun and the planets revolving around it, Mercury, Venus, the Earth, Mars, the Asteroids, Jupiter, Saturn, Uranus and Neptune. To get this in its relations of distances of the planets from each other and from the sun, and then their relative sizes as compared with the sun, let us take this old but simple illustration:

Imagine a level surface cleared of everything that can obstruct the view. At the center place upon an iron rod, say ten feet high, a gilt ball two feet in diameter, conspicuous in the sunlight, to represent the Sun, which is 880,000 miles in diameter, the center of the system. Mercury will be a small grain of shot, tipping a slender rod 82 feet from the gilt ball, 3,089 miles in diameter, 37,000,000 miles from the Sun; Venus a pea 142 feet from the ball, 7,896 miles in diameter and 68,000,000 from the Sun; the Earth a pea slightly larger, 215 feet from center, 7,916 miles mean diameter, 93,000,000 miles from Sun. (The Moon, 2,160 miles in diameter, and 238,000 distant from the Earth); Mars a still smaller pea, 327 feet from center, 4,070 miles diameter, 146 millions from Sun; and the Asteroids grains of sand, two hundred or more, 500 to 600 feet from center. Nearly a quarter of a mile from our starting point we would mount upon its rod Jupiter, the largest of all our planets, a small gilt ball the size of an average orange, which is 1400 times the size of our Earth, 92,000 miles diameter, 496 millions from Sun. A smaller orange on its rod two-fifths of a mile from center would be Saturn, 76,000 miles diameter and 906 millions from the Sun. Uranus, which has not been seen by one person in a million without the aid of a telescope, would be a large cherry, three-quarters of a mile from the center, 36,000 miles diameter, 1,820,000,000 miles from Sun; while Neptune—never seen without the aid of a telescope—is a cherry about a mile and a quarter from center, 34,000 miles diameter, 2,850,000,000 miles from the Sun. It is estimated that the volume of the Sun is 625 times that of all the planets put together. Imagine all in motion, each planet moving in its appointed place and time around the Sun, and the Sun itself carrying everything with it as it moves in its orbit about an unknown center—and you have one lone star, your own, deep sunk in space—with, it may be, 125,000,000 more greater and smaller, made evident by the telescope, in part through the long exposure of photographic plates! *One star* in a 100,000,000!

*Awful Distances of the Stars.*—Within a short time I have read a very interesting article on the awful distances of the stars by Prof. Samuel Barton, of the Flower Observatory of the University of Pennsylvania, from which I quote at some length:

"The constellation Cygnus contains the Northern Cross, and also the first star whose distance was determined. The distance of 61 Cygni, as the star is known, was announced in 1836. It was found to be six and a half light years. Subsequent observation has shown that its distance is greater, or about eight light years. There are but five or six stars which are known to be nearer. Three of them are the very brilliant stars—Alpha Centauri, Sirius and Procyon—the first named being the nearest at 4.3 light years. There are about twenty stars whose distance has been found to be less than seventeen light years.

"We are often asked which is the farthest star from us. This is a big question. For one thing, it implies that there is a farthest star. Is there a farthest star? The current opinion of astronomers is that the aggregate of stars which we call our universe is not limitless and that it comes to an end if we proceed far enough; but this does not mean that there are not other universes, and as a matter of fact we believe there are. To say which star is farthest would mean that we had determined the distance of each of the stars, of which there are found to be 55,000,000 as bright as the seventeenth magnitude, with the certainty that there are a much larger number of still fainter ones. As a matter of fact, the distances of but a few stars, say 200, have been determined, and many of these values are unreliable. The distances are too great for measurement.

"The great star cluster in the constellation of Hercules is a mass of stars, perhaps 100,000 of them, compactly concentrated in a small area of the sky, although no doubt the stars themselves are far apart. We have been able to determine an approximate distance of the

stars of this cluster from us. We cannot say that it is the farthest object which we see. We do not think that it is. We do think that it is much farther than nearly all of the stars not found in such clusters. But this is the greatest distance that I know which has been determined on a scientific basis recognized as valid. The distance is found to be of the order of 100,000 light years. Its distance is thus so great that even the light year is almost too small a unit to measure it with.

"A light year is the distance light travels in a year, traveling 186,000 miles each second for the 31,558,149 seconds of the year. It is about 5,800,000,000,000 miles. It is 63,000 times the distance of the sun. If the distance of the sun is represented by an inch, the light year should be represented by a mile. A watch which ticks five times each second would requires 36,000 years to tick as many times as there are miles in a light year. If the scale of the universe were so reduced that the sun, 93,000,000 miles away, was only a foot away, an object a light year away would be twelve miles away, and the Hercules Cluster, if its distance is correctly determined, would be more than a million miles away. It is found that some spider threads are so light that enough of such thread to pass around the earth (25,000 miles) would weigh but seven pounds. Enough to reach a light year would weigh 790,000 tons. This would be a burden for 552 trains of fifty cars, each carrying twenty-five tons. If the earth was a great windlass winding up the thread, 25,000 miles per day, it would requires ten years to wind up the sun's distance and 630,000 years to wind up a light year."

*Identity of Matter and Distribution of Stars.*—Simon Newcomb, one of our leading astronomers, tells us that the same chemical elements are found everywhere among the stars. The sun is of the same substance as the earth, and the spectroscope shows that its elements are found in the most distant stars. Occasionally stars are found which contain elements unknown to us, but such stars are in every direction and enforce the lesson of unity of structure. The nebulæ, among the rest, contain unfamiliar elements, but they are alike in composition in every quarter of the field under consideration. As respects their proper motions also the stars manifest a certain unity. Their speeds vary from little up to over 100 miles per second, but the speeds are similar in opposite parts of the universe. The "Orion stars"—scattered along the whole course of the Milky Way—have slower motions than the rest. Such correspondences suggest unity and organization—as if the whole stellar universe were originally formed under the impulse of one force which determined the places and motions of its several parts.

"As respects distances, the stars seem to be scattered equally in those regions not embraced in the Milky Way. Their distances from each other and from us are less obvious. The parallax of about one hundred stars has been more or less certainly obtained, and from it we may estimate the distance of certain stars from the earth. Alpha Centauri is found to be nearest to us, but so remote is it that its light takes seven years to reach us, while that of our sun reaches us in eight and one-third minutes, and that of our moon is less than one and one-quarter seconds. This nearest star is 400,000 times the distance of the sun from us. Within a distance twice as great we find eight more stars. All the stars are supposed to be contained within a region whose boundary is 200,000,000 times the distance of the sun from us, the light of the most remote requiring about 3,300 years to reach us. Their number is supposed to exceed 125,000,000 but this estimate is little more than a mere guess. It is possible that the outer bounds are twice as far as has been estimated, and that light from the outer limit would require over six thousand years to reach us. The stars of the Milky Way, Professor Newcomb thinks, are between 100,000,000 and 200,000,000 times the distance of the sun from us. At distances less than this the stars are distributed through space, it is thought, with some approach to uniformity. How many stars are beyond the limit here stated? A definite answer can be given if it is assumed that the ether extends indefinitely through space, so that want of it makes no obstacle to the passage of light. If the stars extended indefinitely, then, it is argued, those of each order of magnitude should be four times that of the magnitude next brighter. For example, we should have nearly four times as many stars of the sixth magnitude as of the fifth. But this is not true of the fainter stars. They do not increase at such rate in proportion to the brighter and, by inference, the nearer stars. Then, again, if the stars were infinite and equally scattered in space the whole heavens should be a blaze of light, since no ray is lost. It cannot be assumed that the dead, or invisible, stars are numerous enough to shut out our view of the remoter stars. They do not thus obstruct our view of the Milky Way, which is believed to embrace the more distant stars of the universe. It is conceded, however, that over one-half of existing stars are too faint to be seen by the most powerful telescope, their invisibility being due to their distance and the faintness of their proper light. The general conclusion remains: "The universe, so far as we can see it, is a bounded whole. It is surrounded by an immense girdle of stars, which, to our vision, appears as the Milky Way. While we cannot set exact limits to its distance we may yet confidently say that it is surely bounded. Could we fly out to distances equal to that of the Milky Way, we should find comparatively few stars beyond the limits of that girdle."

*Eclipses.*—Everybody knows how eclipses occur. Nothing is more simple. It is an old game of blind man's buff played by the Earth and the Moon. "Now you see it and now you don't." When the Moon gets into the straight line between the earth and the sun, it shuts off sunlight from a part of the earth and to so much of the earth the sun is "eclipsed." This can happen only when the moon is "pale and thin," that is, on the side of the earth toward the sun. When the moon is outside of the earth from the sun—of course, at the full—

and comes into the straight line with earth and sun, the earth shuts off its sunlight, and as it has no light of its own by which to shine, it (the moon) is eclipsed. And that is all of mystery or wonder there is about it.

I have seen two total eclipses of the sun, the first August 7, 1869, at Louisville, Kentucky. I spent the preceding day in Mammoth Cave, and had to make a trip of six hours next morning to get into the belt of totality. It was worth crossing the continent for a sight like that at Louisville. The second was on May 28, 1900, at Virginia Beach, near Norfolk, about the middle of the shadow belt, which was perhaps fifty miles in width. The sky was cloudless, and the moon on time. Her dead black disk forged in upon the sun deeper and deeper. As it neared totality, I went back about 200 yards to a pine wood, to hear the birds. They sang all about us, catbirds, mocking birds, and others. During the brief gloom of totality not a chirp was heard. But when the sun shone forth again, its first gleam like the flash of an electric light, they again burst into song—"for the morning cometh." Near Louisville, Kentucky, during the total eclipse of 1869, the bats were flying and the birds went to roost in the deepening twilight. Others told me at Norfolk that, where they were, the chickens went to roost and after totality the roosters crowed for the new day. Supt. W. W. Rupert, of Pottstown, was at Norfolk, an interested observer of this eclipse. A total eclipse is not uncommon. It occurs nearly every year somewhere on the earth, but the area of totality is usually so small that few people have seen this impressive spectacle. Often eclipses occur in remote parts of the earth not easily reached. During the past century, of the seventy or more total eclipses of the sun, but few have been visible over any large part of the United States. The last total eclipse visible in this country occurred June 8, 1918, the shadow passing from Oregon to Florida, totality two minutes. The next will occur January 24, 1925, which will be seen in a part of the New England States.

*Color of the Fixed Stars.*—The color of the stars is also an interesting matter of observation with astronomers. They are seen white, red, yellow, and blue, and of many intermediate tints and shades of color. These also seem to change from time to time in the case of many stars. Capella, for instance, just risen in the northeastern sky, has been red, then yellow, then deep blue, and now it is noted as pale blue; Vega as bluish white, pale blue, deep blue, and green; Altair as yellow, blue, and green; Sirius red, white, blue, and green; Aldebaran, Betelguese, and Antares red, and Arcturus yellow and red. Perhaps not more than two or three of the stars of first magnitude are white. Many of the multiple stars present splendid contrasts of color. Sir John Herschel, describing a cluster of stars in the Southern Hemisphere, as seen through his telescope, says that it had "the effect of a superb piece of fancy jewelry."

*Ten Thousand Multiple Stars.*—As to the number of multiple stars, more than ten thousand which appear single to the naked eye, or to a power of the telescope not high enough to resolve them, have been found to be double, triple, or quadruple, revolving in many cases about a common center of gravity. The North Star is double, Castor is double, Pollux is quadruple, Mizar is double, so are Almaach and Diphda, and the list might be extended through hundreds and thousands that have thus far been catalogued.

*Fixed Stars and Star Groups.*—Everybody knows the North Star. Certainly everybody who has been much upon the water, or who has lived upon or had occasion to cross pathless deserts or broad prairies, and has needed some *one* point amid all the moving stars that should be fixed and sure, by which to guide his course. You would search in vain for an Arab in the eastern, or an Indian in the western continent, or for hunter or guide, seaman or pilot, in all the northern hemnsphere, who does not know the Polar Star. Each of these men needs it. It enters into his life, becoming an important factor in his life experience. Whatever else is changing, that is apparently fixed, immovable, a pivotal point about which, or upon which, revolves the vast "hollow shell studded with golden fires."

Why should this one star be fixed while all the rest are describing curves greater or less, according to their distance from it as a center of motion? The truth is, all the stars, equally with the North Star, are at such immense distances from our Solar System, as, despite their enormous velocities, to be practically fixed stars. For, if our earth had no motion, either upon its axis or in its orbit, they would never be seen to rise or set, nor would any constellation be perceptibly changed in appearance in thousands of years. The motions which they now but *seem to have* are wholly dependent upon the two motions of the earth.

The earth being spherical in shape, its axis always inclined at the same angle to the plane of its orbit—which orbit is practically obliterated by the immense distance at which the stars are placed—and the stars being "fixed," there must be one point in the northern heavens and another in the southern, in a direct line with this axis. If, at either of these points, there be a star, it will be a Polar Star (directly over the pole), whose position will, for ages, remain unchanged.

Our present North Star—which the Arabs named Alruccabah, the Greeks Cynosure, and the Romans Polaris—is within a degree and a half of this true pole, and hence, in the round of the year, it really describes a circle whose diameter is three degrees. Around this star, in one direction and another from it, are ranged the circumpolar constellations, the Great Bear, the Little Bear, the Dragon, Cepheus, and Cassiopeia, which are always in sight. Let us then begin with the North Star, which, if it became a dead star to-night would continue to shine just as we see it for more than forty years. The "Big Dipper" of Ursa Major, whose last two stars, Merak and Dubhe, are the "Pointers to the North Star" (about 28 degrees distant), is one of the most widely known star groups, and easily identified. Now let us find Arcturus, which at this time of the year is low in the northwest to rise early in

the northeastern sky. An easy way to make certain of the identification of Arcturus is this: Look for the Great Dipper, which will be found between the pole and the zenith, with its handle upward. Follow with the eye the bending line of the handle, beginning at the bowl, and continue it, beyond the last star in the end, to a distance about equal to the entire length of the Dipper, and the eye will be led to a bright yellowish star, which is Arcturus. Far southward shines the white star Spica, Ear of Wheat, or Ear of Corn, in the Virgin, one of the twelve constellations of the zodiac. Spica is a little west of south. Still farther west and at about the same altitude is Regulus, in the constellation Leo—the jewel in the handle of the Sickle, which forms the Lion's head and shoulders. This is another constellation of the zodiac, and Regulus is within a half degree of the ecliptic, which is the apparent path of the sun in the heavens, and the real path of the earth in its annual orbit around the sun. These are all stars of the first magnitude. Others are Vega in the Harp, which may be known by the beautiful parallelogram of faint stars near it; Altair in the Eagle, three stars in a straight line in the east, this the brightest; and Capella, in the Charioteer, a splendid white star.

"Which maketh Arcturus, Orion and the Pleiades." We find this in Job, the oldest book in the Bible. Here is a strange thing: That what is now believed by astronomers to be the largest star and what is known to be the grandest constellation and the most striking star cluster, should be named together in this way four thousand years ago. In the middle of June this great star is overhead at 9 p. m. It is now in the eastern sky in the early morning. Even for those who know and care but little about astronomy it is worth while to look carefully at Arcturus, when above the horizon, because it is believed to be the very mightiest sun that the heavens are known to contain. Its distance is about a thousand millions of millions of miles, or more than ten million times the distance of our own sun. Since the intensity of light decreases as the square of the distance increases, it is easy to show that if we were as near to Arcturus as we are to the sun, the earth would be vaporized by the blast of unimaginable heat which would smite it, for Arcturus must exceed the sun in light and heat-giving power in the ratio of six thousand to one! As to the actual size of Arcturus, it is not improbable that its globe would more than fill the entire space that is belted by the orbit of the planet Mercury! Not to know Arcturus, then, "is to be unacquainted with the most stupendous physical phenomenon within the range of human vision."

Northeast of Arcturus will be seen the beautiful circle of the Northern Crown, and between the Crown and the horizon, the brilliant Vega will catch the eye. This star ranks next to Arcturus among the recognized giants of starry space. Its distance is more than five hundred millions of millions of miles, and in light-giving power it probably exceeds the sun about two thousand times. The telescope shows a beautiful contrast of color between these mighty suns.

Orion is above the horizon from November to April. It is seen from all parts of the world because directly over the equator. When it is on the meridian we have the most splendid sky of the year. Three bright stars of the second magnitude, "The Belt," used as a measuring line three degrees in length. Yon can't miss it. Then a large, irregular quadrangle about these stars, the longer side north to south. "The Belt," referred to by Job when he asks, "Canst thou loose the Bands of Orion?" They are also known as the "Ell and Yard," "Three Kings," "Three Stars," "Jacob's Rod" and "The Rake." Their names are Mintaka, most northern, Anilam and Anitak. In the large quadrilateral, the bright star in the right shoulder of the giant is Betelguese, ten degrees from the Belt. The bright star through the Belt from Betelguese and nine degrees beyond it is Rigel. Bellatrix in left shoulder is fifteen degrees north from Rigel, Saiph (Safe) in right knee, south from Betelguese (Be-tel'-geese) completes the quadrilateral.

Betelguese makes a large equilateral triangle with Sirius and Procyon, its sides twenty-six degrees in length, easily distinguished. These stars are all of the first magnitude. Sirius, the "Dog Star," is the brightest in the heavens. It is in the head of Canis Major, the Big Dog, with a large triangle of stars to the southeast. The ancients thought it was the heat of this star which, added to the Sun's heat, caused the "dog days" of midsummer. The smaller star near Procyon is Gomelza. The Hyades is a V-shaped cluster in the head of Taurus, the Bull, of which the bright star Aldebaran is the eye of the Bull. The Pleiades, the "Virgins of Spring," known also as the "Seven Sisters," are in the neck of the Bull, about eleven degrees northwest of the Hyades and Aldebaran. The Bull is one of the constellations of the zodiac. Use the Belt of Orion, three degrees, as your measuring line. Procyon and Gomélza make a long parallelogram with Castor and Pollux of Gemini, the Twins, five degrees wide by twenty-three long. The Twins are in the Zodiac. Castor, Dubhe and Regulus in the Lion make nearly an equilateral triangle. Regulus is in the handle of the Sickle in the head of the Lion. Denebola in the tail of the Lion is twenty-five degrees east of Regulus, and ten degrees southeast of Zozma, in the back of the Lion.

By nine o'clock of evening now the whole eastern sky, from the meridian to the horizon, is brilliant with the glory of stars and star groups—no other equal sweep of the heavens being comparable to this in the richness of its starry splendors. Here are the Pleiades and the Hyades, with the ruby star Aldebaran; the Great Dog, with Sirius blazing as only Sirius can, and its beautiful triangle lying low towards the horizon; the Little Dog, and its bright star Procyon; the magnificent constellation Orion; Castor and Pollux of the Twins; and, farther to the north, Capella and her kids.

The Northern Cross now stands in the early evening a very conspicuous star group in the northwestern sky. To fix this beautiful fig-

ure, which is a well-proportioned Roman cross in the constellation of the Swan, we make a large triangle of the three most brilliant stars in that quarter of the heavens—all of these stars being of the first magnitude. With Deneb (in Cygnus, the Swan) at the vertex, which is the star in our triangle nearest the meridian overhead, the two stars at the angles of the base are Altair in the Eagle and Vega in the Harp, some 40 degrees distant from each other. Of course, Vega lies to the north. It is a brilliant white star which may at once be identified by the shapely parallelogram of faint stars a very short distance southwest from it, and belonging to the same constellation. Altair is at the southern angle and may readily be recognized as the flashing brilliant in a straight line of three stars some five degrees in length. It is the middle star of the three, that on each side being as promptly recognized, though much smaller in apparent magnitude. Halfway between Altair and Vega, and a short distance above the base line connecting them, is found the double star Albireo, in the foot of the Cross, which we have several times seen dissolved by telescopes of moderate power. Having now the head and the foot of the Cross, of course the arms fall into place at once and the figure is known, not soon, if ever, to be forgotten. The triangle just indicated is the simplest and best means we know of for identifying this constellation. The star which is the nail fastening the arms of the Cross to the tree, is Sad'r (pronounced *Sar*), that at the extremity of the southern arm is Gienah, while that at the end of the northern arm is known only by its proper Greek letter. The star somwhat off the line between Sad'r and Albireo, faint and variable, is not named. In the parallelogram of the Harp, near Vega, the two stars farthest south are Sheliak and Sulaphat, the latter being nearest the western horizon. In the Eagle, the faint star immediately north of Altair is Tarazad, that very near it on the south in the same straight line is Alshain.

In the small space in the Milky Way between Sad'r and Albireo, Herschel estimated the number of stars at nearly 350,000. The first star (61 Cygni) whose approximate distance from us was discovered—and there has been only one star since discovered to be nearer to our earth—is about 7½ degrees southeast from Deneb. It is distant from our solar system more than seven light years. When we recmember that the light comes from the Moon, some 240,000 miles distant, in little more than a *second* of time, although it would require a locomotive engine making 1,000 miles a day full eight months to pass over the same distance—and from the Sun in eight minutes, the same engine requiring more than 250 years for this distance—we begin to have some hazy and indistinct perception of what is meant by "light years." A single light year corresponds to 10,000,000,000,000 miles. Vega is estimated at twenty-one light years distant! The distances of Altair and Deneb are not yet estimated—doubtless they are much farther away—though the spectroscope seems to show that the latter is approaching our system so rapidly that in 200,000 years it will shine in our sky with a brilliancy greater than that of Sirius.

We turn next to another striking group known as the "Great Square of Pegasus." This is now nearly overhead between six and seven o'clock in the evening. The figure makes what is called a "square," although its sides range from thirteen to sixteen degrees in length. Three of its stars are in the constellation Pegasus, while the fourth, at the northeastern angle, is in Andromeda. The northern star on the western side is Scheat (Ske-at), the southern star is Markab, both in Pegasus. Scheat makes a small but beautiful isosceles triangle to the west, with two stars of like brilliancy in the breast and fore leg of the Winged Horse, Pegasus. The southern star on the eastern side, also in Pegasus, is Algenib, while the northern star Alpheratz is in Andromeda, as has been said. A line carried some forty-five degrees south through Scheat and Markab will fix Fomalhaut, a bright, lone star in the Southern Fish, while another line carried a less distance through Alpheratz and Algenib on the eastern side of the Square will pass near Diphda, in the tail of the Whale. All these stars may be readily recognized by any one of average ability in town or country, and the enjoyment that comes from familiar recognition of stars and constellations will repay a thousand fold the effort needed to acquire this knowledge.

The astronomer emphasizing stellar distance says: "A message from Mars, which at cannonball speed would take several centuries to reach us, would get here in five minutes on rays of light. At the inconceivable velocity of this light-wave telegraphy, a message was started from the constellation Perseus about the time Jamestown was settled; it flashed along day and night at 186,000 miles per second while the American colonies were slowly gaining a foothold, while the nation passed through the bloodiest struggle in its history and it was still rushing toward us sixteen billion miles every day when Dewey's guns proclaimed the nation a world power and Jamestown was nearing the close of its third century. Then, on February 21, 1901, the signal was seen. The apparition was called Nova Persei by the startled astronomers, it proved the brightest of all recorded temporary stars except one, its fluctuations were the greatest ever observed, and there was reason for hailing it as the most wonderful of all stars. Its maximum brightness was reached on February 24, when its light had increased 100,000 times in two days. It fell off a third on the following day, and this was followed by strange fluctuations, while a little later a nebulous ring formed and spread outward at the amazing velocity of light, which is nearly twelve million miles a minute. The message so received, as interpreted by Kapleyn and Wilson, is a marvelous chapter of cosmical history. It tells that three centuries ago an invisible dark star traveling at great velocity ran into a dark nebula, that the star's surface was made white hot by the friction, but rapidly cooled, that the heating was partially renewed as stray nebulous wisps were penetrated, and that as the star's bright rays shot outward they lighted

more and more of the previously dark nebula, which became visible for a little time. So far away was this collision that in four months the flash, traveling at light-speed across the line of sight illuminated a stretch of nebula barely wide enough to be perceived by the unaided eye of man."

*The Zodiac.*—The zodiac was the outcome of the necessity of continual star-gazing for the practical purposes of daily life. As it has come down to us, it forms a broad band in the heavens, sixteen or eighteen degrees in breadth, along the middle of which runs the sun's path. The division of this band—the highway of the sun, moon and planets—into twelve equal parts, or "signs," was evidently suggested by the movement of the moon, there being twelve complete lunations during the year. Each sign corresponds, therefore, practically to one lunar month and more exactly to a calendar month of the tropical year. The sun in its annual round of the heavens passes through one sign each month.

The name zodiac given to this belt of constellations is of Greek origin, and signifies "animal (girdle)," the latter part of the name having been dropped. But while the name is Greek, there is ample evidence that the zodiac itself was borrowed by the Greek astronomers from the Chaldeans. Assyrian cylinders and inscriptions indicate for the existing names and order of its "signs" an antiquity of at least 4,000 years. The constellations of the Zodiac are the Ram, the Bull, the Twins, the Crab, the Lion, the Virgin, the Scales, the Scorpion, the Archer, the Goat, Aquarius and the Fishes. The moon averages nearly two days and a half in each of these signs. They are the "Circle of the Heavens," about which and under which at an awful distance our earth and all the planets of our solar system are continually passing around the sun.

Get these thoughts and these facts clear. We are all the while simply riding around the sun at high speed. Our chariot is the Earth. It takes a year for us to make the trip to the last second, less for the planets Mercury and Venus, and a longer time for those planets whose orbits lie outside our own. During the day we see no stars, but they are there just the same in their appointed places, lost in the brilliant light of the Sun. As a child on the "flying carriages" at the Fair you saw all who stood around the entire circle about which you were moving rapidly, so here you would see in each twenty-four hours, as the Earth revolves upon its axis, all the constellations and all the stars we ever see in the round of the year were it not for the light of the sun during the day. Let this fact "soak in." It is important that you should be clear upon it.

*Presence of God in Nature.*—Let us now turn for a few moments to a single thought which I wish to enforce, mainly in the language of others. It is the thought of the presence of God, and of God's plan everywhere throughout the kingdom of Nature. George Macdonald has well said, "Better to be a little wise than in knowledge to abound." And this is wisdom. And again, "Better a child in God's great house than the king of all the earth." This is filial love. In these thoughts, as we firmly believe, lies the only true wisdom; in their realization in our lives, the only true happiness. John Ruskin, speaking of the beauty of the clouds, says: "It is a strange thing how little, in general, people know about the sky. It is that part of creation in which nature has done more for the sake of pleasing man, more for the sole and evident purpose of talking to him and teaching him, than in any other of her works, and it is just the part in which we least attend to her. There is not a moment in any day in our lives in which she is not producing scene after scene, picture after picture, glory after glory, and working still upon such exquisite and constant principles of the most perfect beauty, that it is quite certain it is all done for us and intended for our perpetual pleasure. And every man wherever placed, however far from other sources of interest or of beauty, has this doing for him constantly. The noblest scenes on the earth can be seen and known but by few. It is not intended that man should always live in the midst of them. He injures them by his presence; he ceases to feel them if he be always with them. But the sky is for all. Bright as it is, it is 'not too bright and good for human nature's daily food'; it is fitted in all its functions for the perpetual comfort and exalting of the heart; for soothing it and purifying it from its dross and dust. And yet we never attend to it."

The poet Lowell, going a step further than Ruskin, and assuming that people do look with familiar gaze into the sky, has written: "But to none of us does the present continue miraculous even if for a moment discerned as such. We glance carelessly at the sunrise, and get used to Orion and the Pleiades." Rev. Dr. Mayo recently expressed an old thought in striking form when he said: "Every child of man is a child of Almighty God and is all the while being educated in a glorious university—the Universe in which he lives—through all the agencies and events which go to make up our human life." And rising higher yet—to the mountain height of a splendid vision—the warrior bard of Israel breaks forth into this pæan of triumphant gladness:

"O praise the Lord of heaven; praise him in the heights. Praise him all ye angels of his; praise him, all his host. Praise him, ye heaven of heavens, and ye waters that be above the heavens. Let them praise the name of the Lord, for he spake the word and they were made; he commanded and they were created. He hath made them fast forever and ever; he hath given them a law which shall not be broken."

Thus the view broadens as we gaze! The infinite variety and wondrous beauty of the sky, the clouds of heavenly tint that curtain the chamber of the rising sun, or that make the more than earthly beauty of the gloaming—the stars that Adam looked upon in the pleasant walks of Eden, the same that we may see in the round of each passing year, often with the gladness of a quick surprise as after a long absence they rise again in the early evening above the horizon of the eastern sky—the training school into which, for soul development, the Father has sent his

child, this "glorious university" which is but the primary school to another, where for eternity the development of the powers we now possess, mental, moral and spiritual, will doubtless go forward from one height of attainment to another yet higher, "ever nearing, never near to God." If I could talk to you with the eloquence of the dead Mitchell, this hour would mark an era in the lives of many of you. You would go out from this place intent upon the study of a new science, with an interest aroused that would never fail you in this world or in the next. For there as here we shall, in the sublime words of the astronomer Kepler, "but think the thoughts of God after Him," and surely the grand problems of the universe are fit subjects to engage the attention of immortal beings, whether "here or beyond."

Why do we so universally ignore, in the schools and in our lives, the magnificent science of Astronomy when Astronomy is the master science, with its perpetual change for our contemplation? When will men and women in educational leadership be wise to a fact like this? What a school of reverence is the star-gemmed vault of the Heavens that bend over us!

Build thee more stately mansions, O my soul
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from Heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by Life's unresting sea!

[The June number of *The School Journal* may contain a star list supplementary to this paper, that will be of especial value to teachers interested in the study of the stars.—Ed.]

## FUTURE OF THE STATE ATHLETIC ASSOCIATION.

BY SUPT. EDWARD SARGENT.

THE origin of the play instinct is a matter of interesting discussion. Numerous books have dealt with such subjects as "Why we play." They make good reading and possibly some converts to one or the other theory of "Why we play." They do not, however, help us much. The more important thing for us as educators to give our attention to, is the fact that the play instinct, wherever it came from, is with us, and with us to stay, and must therefore be taken into account, simply because it will not be ignored. Children, adolescents and adults must and do satisfy their craving for relaxation in some form of play.

From this instinct we have our chiefest problem in secondary education, namely "athletics." We did not originate the problem. It came to us from the academies, when the high schools took over their function as preparatory schools for college. In the academies athletics were, as in the colleges to-day, frankly a means of advertising. No college could afford to lose continually. If they did they could look forward assuredly to a falling off of the enrollment. Winning in college and academy was no small item of prestige and made the institution a desirable school or the reverse.

This inheritance was not an unalloyed blessing, indeed it has been found to be a great care, for the supervision of athletics in the high school was, for the most part, omitted. There were usually no funds available for this purpose, for the need of advertising was not felt and the instructors had not learned to value the school in terms of victories won. It was not till the evils of unsupervised athletics in high schools were thrust upon the school authorities by abuses that cried aloud for reform and by the neighboring presses that outdid one another in attacks on visiting teams and defence of the home players, that any effort was made to give this department of activity, now part and parcel of the school, some oversight. Suppression was impossible. The play instinct would find some outlet in outside teams over which the school authorities had no control, if not found in the course of the regular school life. Then too another difficulty was the athletes themselves were not the worst or most depraved boys in the school. There was even a strong appeal in their manly strength not carefully analyzed at first, just felt and later recognized. From this it was just a step to see that there was something other than evil in athletics. It took a very superficial study to even find some good results character training in team work, the subordination of self to the larger good, grit and stick-to-it-ive-ness. Then came the revelation based on a sound psychology that sensible, clean athletics with the enthusiastic joy that accompanies competition and the moral and natural and physical training that is sure to follow were a good thing. It was well for a boy to take his place in a group and perform his part in the cause for which the group acts. Jealousies, selfishness and lack of confidence give way to group consciousness. And as a final outcome of this team play is the creation of a life-long love of physical activity that may be carried over into and throughout life. This is a race asset and will prevent deterioration. So far so good. Athletics were destined to remain. But with their retention came a fourfold insidious temptation, very hard to resist. If I recalled these temptations to you they would be instantly recognized, and many a breast amongst us would be smitten with

the repentant cry, "mea culpa," "mea culpa."

(1) To win games is the only end of athletics, and "the end justifies the means."

(2) To pad teams with explayers to win a final game, to play dirty players and students guilty of unsportsmanlike conduct solely to win.

(3) To play students whose scholastic record does not entitle them to properly represent the school, on the same principle that, contrary to the Hague agreement, our enemies used Gas and Liquid Fire, making reprisals along the same line necessary.

(4) To use biased officials or worse, officials of inferior ability and knowledge, a most potent cause of squabbling and unhappy differences.

One or more of these evils naturally destroyed many an alliance, for defeats meant unhappy recriminations and breaking off of athletic relationships. It is a sad commentary on our sportsmanship that few teams can lose gracefully, and acknowledge that they are outplayed.

The reaction in many quarters brought about an effort to supplant athletics with so-called "physical exercise." This came to grief. Athletics will not be supplanted. Physical Exercise is not under criticism. It is certainly a great benefit. It makes for hardening the muscles, toning the system and a thousand other things; it may be used as an incentive to and adjunct of play. It will not, however, take its place. It does not produce that soul expansion, self-finding social consciousness of personal responsibility to team work, and, as I have said, the enthusiastic joy in competition. The need was not elimination but reformation.

This must come with athletics as with every other "driving impulse," not by suppression but by (1) opportunity for proper use, and (2) protection from abuse. Opportunity for proper and healthful participation in athletics and protection from these grave abuses will give athletics their proper place and suggest our problem.

If there is one thing that has given us a feeling of confidence in our country, it was the swift and sure grasp of this principle when she drafted her best sons and sent them away from the conventions of home and sent after them those war activity organizations to give them (1) natural and healthful social life, and (2) protection from vices too easily accepted, but most detrimental and vitiating. They called this "sustaining the Morale." We must adopt the word and make it mean a healthful natural condition and a happy state of mind. There must be a "Morale" in athletics.

To make this a reality, or at least to render aid in this direction, prompted the writer to urge and a group of kindred spirits to put through in 1913 the organization known as the Pennsylvania Interscholastic Association.

The founders believed thoroughly in Athletics, and recognized that there should be not only larger opportunities for fostering them, but also protection from the evils that were destroying the sports and bringing the whole realm of Athletics into disrepute. The natural method was to eliminate the throb of the war drum and furl the battle flag and seek a federation of the athletic world. To seek the co-operation of the schools by a *binding treaty* of all schools both high and secondary in the state. Such an alliance means giving up some of our individual rights in the interests of better living, even in some cases where we ourselves are not entirely the gainers thereby.

The first Board of Control set forth five clear-cut and definite aims for themselves. Aims that in their belief went to the root of the difficulties most surely prevalent among us.

(1) Standardize the scholastic requirements for eligibility.

(2) To be a high court of appeals to adjust mpartially difficulties and disputes between rival schools.

(3) Regulate and overcome by a method of registering officials, and the reporting of the treatment extended to visitors by the home teams, and the fairness of officials, some abuses we all desire to forget.

(4) Placing the responsibility for the conduct of the Athletic teams of a school where it logically belongs, in the hands of the principals.

(5) That all members might be in touch with the aims and realizations and doings of the Association the publication of an annual, giving the minutes of meetings and actions of the Board of Control, cuts of teams, scores, financial accountings, etc., in fact, all matters of athletic interest.

Some of these things have been done and well done. Some are as yet ideals, because there has not been that co-operation of the members and of the High Schools to be expected in a move of this kind. Yet the Board of Athletic Control can confidently report progress. Financially they are in good standing and, as to enrollment, the roll call shows a doubling and more over the scant 35 High Schools that first enrolled.

The influence of the Association has been widely felt, and to one who has kept in close touch with the work and seen some of the silent influences and beneficial results and who can speak definitely thereon there is the reminder of a story of a similar development resulting in the supervision of athletics in the Philippines. Some 300

school athletes were assembled in a certain town in our island provinces to engage in a grand meet and with them came a chief, old in years and distrustful of all things new. To him it was wonderful that such a meet could take place without trouble. "Just look at that," he said, "the umpire has called *our batter* out. Why a few years ago no umpire would have dared to call our batter out."

That the P. I. A. A. has not had this co-operation and support is, I believe, not so much the fault of the schoolmen themselves as it is with the Association. They have not as yet realized their power for good, and have not therefore risen to the heights of missionary zeal that cries, "Woe is me if I preach not the Gospel of Righteous Athletics, and compel them to come in, by the logic and force of my enthusiasm."

The logic of the future is found in the ideals of the past. Reviewing these, there is little room to question their effectiveness or to change them. The need of the present is to recognize that the institution is in its infancy and its future growth and usefulness will be commensurate with its power to proselyte and educate and thus secure the support and the co-operation of all the schoolmen of the state.

Among other valuable things, the War has taught us two very important truths. People are usually right-minded and will support things that are right, if these things are made clear to them. They will rarely, however, take the trouble to dig up right for themselves. Especially is this true if it interferes with habits already fixed. Therefore the need of propaganda and the organization of immense machinery for getting facts before the people, Bureaus of Information, "4 minute men," etc.

I am certain as never before that it pays to educate, and it pays to advertise. The future of the Association and its usefulness will be commensurate with the faithful carrying out of these two things. Unless there is more work done along these lines of advertising the Association's power for good, there will be a lessening of its influence. I do not see why we should hesitate. I believe no schoolman in this great state can fail to take his stand with us if this vital matter is presented clearly and forcibly to him. Is there any argument, save a selfish one, that refutes the advantage of work under rules and regulations of eligibility, raising the standards of scholarship, fair play and real sportsmanship and the desire to eliminate those evils we have all suffered to exist too long? If not and, if there are overwhelming arguments and even demonstrations of the benefits of the Association, do we not owe a large duty and responsibility to bring before the schoolmen of this state the moral issue involved? Insisting in the last analysis that the destiny of the individual school is determined at the point of moral decision. To this end the ANNUAL is a necessity and should be delayed no longer. A drive for memberships should be begun and carried out relentlessly and rigorously and full lists of those in good standing be kept and published and sent to all Principals and Superintendents, and, I believe, if we choose to make the effort, lack of membership in the Association can be made a matter of explanation.

To date there have been no efforts to go beyond Foot Ball and Basket Ball for Boys. The time is ripe for two other lines of activities, both very pressing and both of benefit to the Association, enhancing its value and prestige. First, the growing need of recognizing, regulating and standardizing athletics for girls. It is stated on good authority that girls on entering college are more immature in their aims and views than one is accustomed to expect in university students. "Physically they are inactive, except in social affairs and their muscles are soft and flabby. The chest, abdominal and leg muscles are especially weak. Few are able to chin themselves once or lie on their backs and with toe supports come to a sitting posture. Ninety per cent. enter college each fall suffering pains at their periods. These are either overcome entirely or marked improvement is shown under a proper and regular exercise." Is this not a reflection upon our High Schools, and do we have no responsibility for girls' athletics, and is it not true that the same benefits cited as resulting from boys' athletics, would result for girls, from Girls' Athletics properly directed? We are continually faced with a growing demand on the part of the girls for recognition, and the time is ripe for us to recognize this demand. That there are difficulties is not to be wondered at, but difficulties lie largely in the matter of direction and proper education, and no organization is better able to do this than the P. I. A. A. Naturally the girls turn at once to the same sports that boys are interested in, and they wish to play basket ball and other strenuous games, according to boys' rules.

Tennyson, once for all, in one sentence, put an end to the foolish fallacy of the equality of the sexes for all things.

For woman is not undeveloped man,
But diverse: could we make her as the man,
Sweet love were slain: his dearest bond is this,
Not like to like, but like to difference.

There are grave dangers in girls' athletics, dangers, not only to the girls themselves, but to generations still unborn. Es-

pecially is this true of basket ball when boys's rules are played. For this reason, the Y. W. C. A.'s of the country, after careful investigation, have sternly regulated and eliminated such features of the game as are injurious, and yet have not robbed it of its attractiveness and skill. No number of victories in youth will repay the sterile women for her loss of the privilege of motherhood.

I have insisted that the girls in my school play the girls' game according to the girls' rules, with three courts and six players as a minimum, much to their disgust, because my school neighbors, who have not had my experience in this phase of the work at Gary, insist on boys' rules. To standardize, educate and make a matter of membership, that schools insist upon this employment of girls' rules, should be, in my opinion, a future phase of this Association's work, and, as a practical suggestion leading to this end, let a resolution be passed at this meeting to the effect that, wheras this subject of athletics for girls is of vital interest to the schools of Pennsylvania, that the Board of Athletic Control request the Programme Committee of the State Educational Association to co-operate with this athletic association by inviting the foremost authority on this subject to address the State Educational Association at its next regular annual meeting.

The second point of departure is in the department of track athletics. Here we might take lessons from the State Association of Indiana. They have an annual track meet, under the direction of the Athletic Association Board of Control and under the auspices of the State University, and it is no small honor to make or sustain a record at these annual meets. Nothing so establishes the right to existence or carries so much weight for the Athletic Association as properly conducting this event. I am aware that this is more difficult in Pennsylvania because of its size and shape. It is, however, very far from being an impossibility. It will require careful planning and the co-operation of the universities. It will require two preliminary meetings, one at a point in the Eastern part of the State and one in the Western part of the State—*Record men* competing at a point central to all. It is my belief that the colleges will recognize the importance of this as a means of fostering athletics of a high order, and will see in it also legitimate advertising for their institutions. So I believe they would instantly co-operate if rightly approached. I should like to see, therefore, another resolution passed, that it is the sense of this meeting that the Board of Control take steps to forward an annual track meet. The details of this Track Meet to be laid before all High Schools previous to the next annual meeting of the State Educational Association.

In the matter of State control of athletics, the only hope of the future is in a firm belief *"in the cause"* and an insistent missionary zeal. The first we all probably have, but the second we must increase by word and deed, in season and out of season, for only in this way will the P. I. A. A. vindicate its right to demand our support.

The resolutions suggested in the address of Supt. Sargent were formally presented and adopted.

An abstract of this address, published in neat pamphlet form, which was sent out to some four hundred high schools in the state, shows the following High Schools as members of the State Athletic Association, namely: Allentown, Altoona, Annville, Aspinwall, Beaver Falls, Berwick, Brookville, Camp Hill, Carlisle, Chambersburg, Charleroi, Clearfield, Connellsville, Danville, DuBois, Dunbar, Dunmore, Easton, Elizabethtown, Ellwood, Farrell, Franklin, Gettysburg, Greenville, Grove City, Harrisburg Technical, Hazelton, Hershey, Honesdale, Huntingdon, Jersey Shore, Johnstown, Latrobe, Lebanon, Lehighton, Lewisburg, Lititz, Lock Haven, Mahanoy, Meadville, Mercer, Middletown, Millersburg, Milton, Minersville, Monessen, Mt. Carmel, Mt. Union, Myerstown, Nanticoke, New Castle, Oakmont, Oberlin, Oil City, Palmerton, Palmyra; Philadelphia: Central, Frankford, Germantown, Northeast, Southern and West Philadelphia; Peabody (Pittsburgh), Pittston, Pottsville, Punxsutawney, Reading, Renovo, Rochester, Scranton Central, Scranton Technical, Shamokin, Sharon, Steelton, Sunbury, Tamaqua, Tarentum, Tyrone, Uniontown, West Newton, Wilkes-Barre, Williamport, Windber and York.

## COMMERCIAL RELATIONS.

BY W. H. FETTER.

THE subject of Commercial Relations is so broad and comprehensive that I feel it should be given much thought. I am not capable of handling it, but as such an honor has been conferred upon me, I will endeavor to give you some of my views along the lines of commercial relations as a telephone manager.

I feel that the future of our country is in the hands of our high school students of today. We read in our newspapers and our magazines and we hear about the cry of the big executives for efficient men and women, and the next generation will greatly determine the future of this great nation.

In the Century Dictionary, business is defined as "the supplying of commodities for

the well-being of mankind." Therefore when the future destinies of this country are decided, it will be the rising generation, the high school students of to-day, that will be at the helm. Commercially speaking, we are the greatest nation in the world. We want people to know us, to do business with us, by convincing them by our lives and activities that it will pay them to know us, to do business with us.

The biggest thing is to make people believe what you are saying to them, and there is only one way to do that—to tell them the plain, honest truth. The same principles that are involved in one's everyday life, should be involved in business, and the more we realize that the more beautiful life and business become, the more perfectly they harmonize. No matter what a person undertakes, they must fall in love with it, must throw their whole heart and soul into it, if they want to win; and in order to fall in love with their work they must do something worth while. Every boy or girl has that "something" in his make up, and to bring it to the surface he must be interested body and soul in what he undertakes.

You may say that your interest is in salesmanship, accounting, banking, production or transportation; the same fundamental principles apply. You need a general knowledge of the fundamentals of any business to guarantee your future success. Why? Because in handling the public the first vital thing necessary is Confidence. For the public, naturally, will not have confidence in a business concern or an individual unless they are absolutely certain that you have a thorough knowledge of exactly what you are doing. The public makes room for every man who knows where he is going.

Dealing with the public there are generally two distinct types of business men: the heart type and the head type. Dealing with the first you must be careful not to be offensive by being too aggressive, for very often an abrupt answer may be very offensive, when a little tact in a persuasive way would have made a friend—and all business concerns need friends. Very often dealing with the head type it is necessary to be more aggressive, but it still requires tact only in a little different manner, for with the head type indecision will often lead the public to believe that you are afraid and by such actions you lose their respect. It is often the same old story told in a new way, but it sounds entirely different. It is simply a case of convincing a man in his mind instead of through his heart. The fundamental principle of all business is common sense. It requires the development and application of both mind and body. These powers go hand in hand and must be trained and developed in equal measure.

Another thing paramount in commercial relations to the public is Judgment. It has been said that a man is nine parts judgment and one part talk, and he uses his nine parts judgment to tell him when to use his one part talk. At any rate judgment is a barrier against the fire of failure, and is very essential in the building of a firm foundation for your future.

Another valuable asset to any one is good nature, cheerfulness, and the signs that you enjoy life. Such qualities are often contagious and may turn "a grouch" into a cheerful person. There is a wealth of virtue in a smile; it clarifies the atmosphere in which you live. Also, a very necessary element in one's life is ambition. Every person seeking a place in the business of life must be willing to "pay the price," and must realize that it is largely through his own individual efforts that he obtains the desired things in life. He must ever hold before his vision a picture of a larger goal ahead.

I recall that at the beginning of our recent war, many American business men stood appalled in contemplation of its effect upon American business. But in the midst of the lamentations of his business associates, Charles M. Schwab boarded an ocean liner at New York and in a few short months returned with orders mounting into the millions from the governments of the Allies, which were primarily responsible for the marvelous development of the Bethlehem Steel Corporation, which now surpasses even the famous Krupps of Essen. In our commercial relations in the business of life many persons fail because they look only for the big things in life, but overlook the little things. Mark this: Pike's Peak could not be measured with a foot-rule, but it was through keeping faith with the foot-rule that trigonometry measured the mountain.

To be a success in life each should take an inventory of himself and endeavor to find out how much old stock there is on hand and what qualities he lacks to meet the demands upon him. Often the reason for a person's failure is a lack of self-control, which leads to procrastination and naturally tends to decrease his capacity. To be a success in life each of us should have a definite plan, and make to-day count. Yesterday is dead—forget it; to-morrow doesn't exist; but to-day is here—USE IT.

People who have created a demand for their service have learned the value of thought. You must learn to think; to think even while eating, to think enough to chew your food well, for poor digestion means a poor disposition, and a good disposition is a fine foundation on which to build.

Another thing paramount in the make-up of an individual who desires to be a success in life is Resolution. Have you ever made a weak resolution and thought that you would do a little more work, but had forgotten it the next breath? Such resolutions are better left unmade. The kind of resolutions that count are, "I WILL get up a little more steam," "I WILL do my job a little better to-day." Such resolutions constitute an obligation and may give birth to a tenacity that will hold you to your purpose.

Last, but not least, is Personality. Much has been said of personality, but much more has been left unsaid. Personality is a reflection of character, and a potent factor in the life of every human being. It is partly made by thoughts. "As a man thinketh" generally determines his purpose in life. All that we achieve and all that we fail to achieve is a direct result of our own thoughts. Personality is composed of many elements, among

which is conduct, for our conduct before the public goes a long way to determine our future relations with them. It leaves a good or bad impression upon the mind. Habits are a big factor in personality, our habits both on and off the job. And good habits build a good character, which is another potent factor in the make-up of all people who would be a success. In this game of Life it is the "fittest that always survive," and mark—no one will value you beyond your own valuation of yourself and the principles you stand for.

Success in business is nothing more than an earnest application of the simple, plain, spiritual virtue that your mother taught you at her knee and that's what the young men and women must realize. I am not attempting to tell you anything you do not already know: I simply want to remind you of it, to convince you that you are now moulding your future destiny among the young men and women of to-day. Now, in conclusion, the one thing vital in making life a success or failure is your own individual efforts along the right lines, and please remember that men and women of principle are the principal men and women.

Work is life and good work is good life. It is not what you know but how well you know how to use what you know, that counts. The trouble in business is not the lack of men with ability, but the terrible lack of ability of men to use their ability. You are judged by the record you make, not by your ability to make a record. Thank you.

## NATURE STUDY IN THE TRAINING SCHOOL.

BY MARY RACHEL HARRIS.

BY Nature Study in the Training School I mean the Nature Study taught the pupils of the Training School and the teaching of the subject by the pupil teachers. We meet our first serious problem in the fact that the teachers have had very brief courses in Nature Study or Agriculture and are not able to compete with the average farm boy or girl. In many cases the teachers have failed to vitalize their laboratory work and notebook with every day happenings at home and on the farm. Then, too, their period of teaching in the subject is too short to arouse a working interest or lasting enthusiasm. The subject is not on the course of study below the high school, so they do their best for the time being. In ungraded schools, books on Agriculture are provided and it is surprising how many young teachers in a short time become the leaders in the community, sensing quickly the fact, that a spirit of co-operation between school atd farm will create a growing interest in school as well as in better agriculture.

The inexperienced teachers of the Training School find it difficult to connect up their nature study work with the home and farm, and many times find themselves working along the literary or spiritual line entirely, using stories, poetry and pictures. This is better than none and seems to the village and city teacher the only approach to the subject in correlation with language.

The main object in the Nature Study movement has been to interest teachers and pupils with special reference to agricultural conditions. To the teacher in the town or village the interest of the school, and community would likely be in school gardens and for teachers working along this line or those without definite plans, the Fall Manual of the United States School Garden Army is an inspiration and a practical and ready assistance. The thinking teacher will select for the basis of her work that phase of the subject that will link the school and community, be it the social, physical, economical or spiritual basis.

Experience in the work makes it very evident that there is as much need for special preparation to teach Nature Study as to teach Domestic Science or any of the Arts on our course of study. A working knowledge of zoology, botany, chemistry and physics with an understanding of the vital and mutual relationship existing between them cannot fail to develop and preserve a loving sympathetic and intelligent attitude toward Nature in general and Nature in particular with boys and girls from six to ten years old.

With us, the time, twenty minutes daily and the subjects, according to season, are planned for the pupil teachers but they are to use their judgment as to when a lesson is to be taught out of doors or in doors; when they are to go "for a walk" or when an excursion, when it is to be a lesson of observation, reproduction or "doing something." With our Training School the work on the campus is, in the potato patch, down in the field, "on the oval," along the Branch, down at the Mill dam, out Middle Spring Road, over in the dark woods, behind the gym, Timber Hill and South Mountain. At the latter places five cedar trees for Christmas trimming and several smaller ones were secured.

The work is grouped under the heads of plant life and animal life. In the plant life our resources are numerous, interesting and vital, while the animal life is mostly acquired or secured for the time. The primary grades have one or two window boxes which belong to the grade as a whole but the individual gardens in glasses, boxes, egg shells or turnips are most interesting and vital to the child because he is watching "the growing" of beans, peas, grass or Timothy seed which he knows very well in crop on the farm. This fall the first grade planted narcissus bulbs in individual pots, gave them special care for a few days and then put them away in the dark basement, with special protection to use them in the Spring for gifts to mother.

Pupils of the sixth grade transplanted some under grown cannas from the campus to large flower pots for their class rooms.

Window boxes belonging to various rooms had been filled with red geranium, several foliage plants and some ivy early in Spring.

These were cared for by the pupils until school closed in June. During the Summer they bloomed luxuriantly and the ivy ran riot over the porch and steps of the buildings. When school began in the Fall boxes were assigned to the different grades to be put in shape for their respective class rooms. Some plants were removed, others planted according to the choice of the pupils, the ivy cut down and the boxes put in place to be cared for during the school term. One box was found to have a growth and mold over the soil, another seemingly abundant growth was covered with a scale. The mice had made a nest in the bottom of several boxes and disturbed the roots of the plants. These were valuable lessons for both pupil and teacher as they knew all about the scale that destroyed their apple orchard but never thought of it in connection with the flowers at the window.

Wandering Jew was brought in abundance and put in water to grow and keep green for the winter when we have no flowers. Bitter sweet berries on vines were gathered and the lesson learned that only a few must be gathered from each vine for fear the birds may suffer hunger when they go to their usual feeding place after a heavy snow or late hard winter.

The potatoes, four bushels, planted in spring and cared for till June, were dug, picked, sorted, bagged and taken to a store for sale by the boys of one grade. Last year when the cry was "raise potatoes," the boys decided that the piece of ground to be plowed under for the first time would be more likely to yield a good crop of beans than potatoes. So beans were bought and planted. There were several pecks gathered, but before the boys disposed of them, having decided that they would be more valuable for planting the following spring than for eating that fall and winter, the boll got in them, and never before in the history of beans was there such a lively inbreeding as in that crop of beans. After picking and picking and more picking there were too few to make it worth while keeping them for Training School work so the boys gave them to a family who secured enough for their garden planting and had several meals of the beans "that were not so bad."

During the year the children learn to recognize the golden rod, aster, wild carrot, butter and eggs, the violets, especially the little blue velvet pansies, dandelion, daisy, various clovers, Jack-in-the-pulpit, dog wood, wild honeysuckle on bush and vine, the pansy, geranium, morning glory, phlox, portulacca, daffodil, narcissus, "chiny aster," chrysanthemum, tulip, scarlet sage and others. They become familiar with them at home, on the way to school and on excursions. But they love to visit and have their class under the old cherry tree when it is in bloom in early spring; the yellow flowered forsythia bush is surrounded daily because it is the first to bloom on the campus, the red japonica near it is interesting. The red, white and striped tulips coming up through the hard cold ground when no other flowers are blooming in the flower beds are most interesting and the visit to the bed with the lesson of Mother Nature caring for them during the winter creates a feeling of wonder and awe.

Then the tiny green leaves of the ivy which covers several buildings are a delight because of their fingers for holding on and the beautiful coloring in spring and fall. The blue berries were scarcely noticed till the wonder of the children as to how the birds were fed during the cold spell over the week end was answered by the chatter of birds feeding by dozens. These berries have for several years been visited very early in the spring by a flock of cedar wax-wings.

The children love the trees on the campus and have no greater joy than to go out under the trees for a lesson. There is the tall "thin" Lombardy poplar "that keeps its hand up to its face all the time," the larches with tiny pale green needles and baby cones every spring, the red and silver maples whose shapes make beautiful pictures, the sturdy butternut tree that stands gaunt and bare early in the fall and whose nuts have brought down the wrath of the teacher upon the boy who picked and played with them during the noon hour, the cluster of hemlock trees by the still, the sturdy little Norway spruce low enough for every child to have a peep at the chipping sparrow's nest and eggs last spring, the good sized spruce tree planted by one of the classes which was to be the Campus Christmas tree, the weeping willow only three years old but whose branches are so long and trailing that the children cannot play under them, then the Jinko leaves so attractive that two or three must be put in the leaf print books of the second grade, the tulip tree which was ten years old before it had flowers and then few of the children detected it till the leaves fell and they discovered the seed pods high on the upturned branches. The big old maple in front of the entrance is interesting because the roots that show through the ground "are nearly as big as trees," and because the red-headed wood pecker has been building there for years. The children had their first lesson in "treeology" when they discovered places on the tree where branches had been cut off and the "sore places painted." Great will be their wonder and interest when they learn that the woodpecker's nest must be filled up for the good of the tree and the pleasure of boys and girls long after they have come to the bend in the road, and are passing on to others the inspiration received from Nature's silent monitors, the trees.

The children have silently been absorbing lessons in various lines, watching the placing of hardy plants to break a long straight line along a road, a cluster of barberry bushes for coloring at other places, fir, cedar, Arbor Vitæ and other hardy plants to beautify the corners around the buildings. The hardy plants placed upon the Training School Grounds were put under special care of the fifth grade. They watched the placing of them, watered them, even on Sunday, till they had a good start, kept the younger children from playing around them and when the time came, cut off the old blooms, tied them to stakes, made by the boys in the Manual

Training room and put around proper protection for the winter.

The younger children collect seeds from various trees as the maple, ash, catalpa, cedar, hemlock, walnut, horse chestnut, tulip, buttonwood and others. These with the seed of pumpkin, calabash, cantaloupe and others are put in envelopes properly marked for early spring work and many times winter number work.

Interesting lessons on the plants, preparation for winter, the grass on the campus when the frost is thick, the snow covered spruce trees, the trees without leaves to cover them, the English ivy "that always stays green" and the familiar hemlock trees are given at suitable times and seasons. The holly, spruce, pine, cedar and hemlock being chosen for December, January and February. In every way possible the work on plant life is made to fit in with the spirit of the season, and the environment of the home and school.

The work on animal life seems to be limited when compared with the plant life available. Subjects of natural interest to the children are animals that are source of everyday food and clothing, insects that are house and food pests, cocoons, squirrels, rabbits, pigeons, the English Sparrow of the campus, the crow so abundant in our valley, the garden friends, earthworm and toad, the garden foes, plant lice and scales, the domestic and wild fowl, domestic animals and the birds of the campus.

With the above mentioned list the children are very familiar as seventy-five per cent. of them come from farms, do farm chores and farm work, and have a farm experience that amazes any teacher. One boy in the second grade, eight years old, takes care of the chickens, about two hundred, twenty-five ducks, four calves, one two weeks old, the others three and four weeks old. He mixes the slop for the pigs, carries it to the pen, drives two horses in a harrow and disker from 8 till 12 and 1 till 7 till the field is all harrowed. He plants corn with a machine, he in one field and father in another, and gathered up the corn that puffed out the silo when they were filling it. During the busy season when he is driving and harrowing he takes his two horses to water and unhitches father's team and takes it to water while father goes in to see about the milking, knows how old the horses, how much they are worth and their ability to work. He takes care of the baby in the early morning while the rest go out to milk, but in the evening milks two of the seventeen cows. He can't pour the milk out of the pails, that is too heavy for him. He brings in all the wood and they burn no coal, picks potatoes, loads hay, etc., but the thing he likes best to do is "husk corn." If there is any other work to do on the farm he does it, but I have omitted it from my list. Boys and girls in my first, second, third and fourth grades work in this way from sun up till sun down, and with pleasure. In the lower grades they frequently go fishing with father, and in the fifth and sixth grades several take annual holidays when certain hunting seasons begin.

With their home knowledge of animals we talk about the crow as a pest, or a scavenger of the ground. We know the squirrel and rabbit, his food, how he eats and why, where and when he sleeps and how he gets his food in winter. We study the insect life of campus and home, the cricket, locust, house fly, mosquito, mouse, cat, dog, pig and horse of the farm. The children love the stories of the sheep and reindeer at Christmas, their habits, home, travel and use in relation to man. They love to watch the animal life from the brook and positively know a brook outside of town where there are gold fish as big as trout. They have been stung by wasps, who lived in the old nests now hanging in the class room. They hear father and brothers talk about the weasel, foxes and mink, know the destruction they cause and can tell you how much money you get if you shoot one and get the hide.

The school children are familiar with the robin. Three hundred were feeding in four adjoining lots one night last spring; evidently they lighted in search of food on their flight north. The children have never failed to ask me if I heard the wild geese honking as they went north the previous night. They know very well the blue jay, woodpeckers, the meadow lark, the Virginia corn cracker, the quail and the pheasant.

The children already live near to nature. Like the rest of us, these things are so frequently with them that they fail sometimes to note the music of the birds, the beauty of the autumn trees, or the voice of spring, as it stirs the sap in the trees and the soul of man. "Eyes have they and see not, ears have they and hear not, noses have they and smell not." How shall we meet this situation, or the reverse where children come from towns and cities and have little or no knowledge of nature?

The teacher surely must be the source of inspiration, and if she is weary and tired with so much of this everlasting teaching, I would quote almost verbatim from Nature Study by Mrs. Comstock. The love for nature should take the teacher and pupils to the woods for relaxation and teach a respect for nature's laws of health. Mrs. Comstock says, "There are only two occupations for a teacher on Saturday, one is to lie in bed and the other to be out of doors, and the last is best. Out in God's beautiful world there is everything to heal lacerated nerves, to strengthen tired muscles, to please and content the soul that is torn to shreds with duty and care. The teacher who will teach nature study this way in her school room instead of the terrors of discipline, eternal watching and nagging, will find a quiet companionship with her pupils that is an abiding joy. It will be the teacher's opportunity to inspire such a companionship with nature as will lead the pupils to high ideals of life and a strong moral integrity in living, to an appreciation of beauty and harmony everywhere revealed to them in their daily lives and home."

# SOCIAL JUSTICE TO THE FARMER.

BY RAYMOND G. BRESSLER.

THE idea of service is back of social justice The title "Social Justice for the Farmer" seems to indicate that, in my own opinion at least, the farmer has not secured, in times past, the benefit of an unearned social increment that his industry has created. In general, social justice demands that a farmer shall not be hopelessly doomed to progressive deterioration by inadequate prices for his products. It demands that he shall have an opportunity to get control of production and shall have a voice in determining what shall be the price of his goods. It demands that he shall have as good opportunities to provide adequate facilities for the education of his children as have the residents of towns and cities. It demands that he shall not be made a victim of his location, and further that the handicaps of his occupation, in so far as society can remove them, shall not be made a victim of his location, and further that the handicaps of his occupation, in so far as society can remove them, shall not be placed on his children. Social justice demands that the speculative be taken out of agriculture. It forbids the accumulation of thousands of acres by one individual while thousands of people are crying for more land on which to make a decent living. Social justice demands that the real tillers of the soil participate in the natural rise of land values. It demands that the farmer shall have not only an adequate price for the product of his labor but also the social benefit of the profit that his products make possible for the townsmen. It doesn't exclude the possibility of a variation in the incomes of various farmers or from various farms, but it does exclude the possibility of a single individual amassing many millions of dollars in a life-time. We all admit that this is as unlikely to occur in a farmer's life as it is likely to snow in Yuma, which you will recall is the place in this world that is so hot that upon the death of an American soldier the Navajo Indians sent a pair of blankets with him to his grave. Social justice demands that the health of the people residing in rural districts be given proportionately as much consideration as that of city people.

The town has been the commission merchant of the farmer, but the business men of most towns, regardless of the fact that one-half their trade comes from the farm, have not been willing to render the optimum of service to country people.

*The Merchant.*—Take for instance, the merchant. His trade ebbs and flows between town and country. The farmers carry to him their produce, and he pays them a price gaining thereon a profit, which is just. The farmers buy from him supplies which they need in the operation of their farms. The merchant makes a profit on this, which is again just. Only narrow-minded individuals, or politicians who desire to secure the vote of the farmer, suggest that this legitimate trade is not in every way just. Where the injustice comes in, however, is not on the amount of money made by the merchant, but in the fact that the merchant's relation with the farmer too often ends with business transactions.

The merchant has been conducting a legitimate business on which he is making an honest man's profits. After that he does not feel the social responsibility which he owes to his rural constituents. All of his spare time and often spare cash are given to the development of this aggregate of population that calls its boundary, really a wall, the corporate limits of the borough. He is dependent on the farm trade as well as on the town trade for his gains. When, however, society is to share these gains, only the townsmen participate in them or, to put it in other words, the town population is the beneficiary of double its share of an accruing social increment, the resultant of trade, while the rural population receives almost nothing at all.

*The Doctor.*—Another striking instance in which the farmer does not participate in this social increment is that of the doctor. We all agree that the doctor is a very necessary professional man to have in the community, and we further agree that the country doctor's work is more exacting possibly than that of any other man—but where does the doctor live? Very rarely out in the open country? He lives in the small town and goes out over the country to serve the farming population. A great part of his living is made on this country practice. Aside from curing the physical ills of the rural people, he is very little interested in anything else.

But there are other than physical ills in a farming population, which from the viewpoint of a nation are second only to individual health, and on which personal health is often dependent. For these the country doctor should also administer cures. They are the social ills of a people caused by a lack of a trained and aggressive leadership. What an opportunity is at hand for all country doctors! The men who hold sacred the most personal things in the lives of their patients most assuredly would be looked upon as capable of advising a people in community problems if they would render themselves available for such servicee. In many instances the farmer, with the country doctor as with the merchant, again loses the unearned social increment which results from his trade.

*The Banker.*—Then there is the banker who, because he is a banker, very often acts as if he were the supreme business man of a community. Maybe he is. But even at that, he has no right to sit in his counting house with an attitude of "Come give me your money, and I'll make money with it from your neighbor for myself." I know of banks where a fellow is almost afraid to check on his own private account. But I am also acquainted with banks and bankers where you are made to feel that you have a friend with money at your call whenever you get ready to make a wise investment. The farms of the United States are woefully under-capitalized, and it

is the fault quite as much of the banker as it is of the farmer. A farmer is nearly always a better risk than a village merchant, but five chances to one the merchant will get better credit, mainly because his stock is in sight and there is a greater possibility for him to realize on his investment on short time.

As one of the leading business men of the locality, if for no reason other than to show that he is a good business man, the banker should get out among the farmers and study their problems. If this farmer is shy on live stock and thereby engaged in a system of farming which is robbing the soil of its fertility, if he is not making a profit because of lack of capital, if poor roads are the cause of the farmer's loss in his farming operations, in short if there is anything wrong with the farmer that can be remedied by the use of more money, it is the function of the banker to render himself available for such service. If the farmer does not seem inclined to avail himself of the opportunities offered by the bank, the banker must put on a campaign of education among the farmers and continue it until his agricultural community is on a fair way to prosperity.

*The Preacher.*—The country preacher is another man from whom the farmer has a social right to expect leadership but in whom he is also disappointed. The greatest sin of the country church is not that the people do not support the church however poor this may be, but it lies in the fact that the preacher is too often not a member of the community. Less and less frequently do you find the preachers living in the country. You can't blame them for this. The Lord knows that most of them would starve to death if they did, unless they conceived the idea that a little labor on the farms would not be out of order. It might also help them to attract a larger congregation. It certainly would be worth more to the church than if he taught school to supplement his salary. Many Pennsylvania "Dutch" are still dubious about the white-collared men. But I must not digress at this point. The fact is that about twice a month, or sometimes once a month, the town preacher on a Sunday morning drives out into the open country to instruct his parishioners. He preaches at Ebenezer in the morning, at Mt. Sinai in the afternoon, and at night, besides leading the Christian Endeavor, he preaches at Union. After this, a man's day truly, he leaves the community for the next two weeks or a month wholly without religious leadership. No wonder the farmers are not church goers, although naturally they are presumed to be religious. Unless we get a resident rural ministry that faces forward toward the home and the farm, towards cows and horses, wheat and corn, toward a social religion, nowhere more perfectly set forth than in the teachings of the Founder of Christianity, the rural church seems doomed. No institution has a right to be indifferent. In the case of the rural minister, then, as with the merchant, the doctor and the banker, the rural population is not enjoying the fruits of a social increment that is rightfully theirs.

*The Teacher.*—Finally, there is the school teacher who, next to the country preacher, is expected to do more things for nothing than any other person in the community. My heart goes out to the high school graduate who goes for the first time to teach a rural school. In too many cases she knows nothing of the problems connected with the plain teaching of the common branches, much less the social problems that are uppermost in any agricultural community or the laws that govern social action. She doesn't realize the gravity of her situation, however, and seems to think, when her day's work is done, that that is all she is called on to do. This attitude of rural school teachers has caused some wit to speak of them as "a mob of mobile maidens meditating matrimony."

The rural teachers rarely come from farms, and likewise they rarely come from the large cities. Why all this to-do, then, about the teachers in the country leading the country boys and girls to city life? It is because the schools in the towns have trained their pupils in such a way that they do not realize the place that the American farmer occupies in national life. It is not the fault of the country school teacher, therefore, that rural education has not been given a rural turn, but it is the fault of our system of education. For years I have sat at the feet of learned men, and listened to destructive criticism of rural education. This idea of giving all rural school work a country life turn is as old as the country life problem. But we have been talking about it and preaching it at teachers' institutes all to little purpose. To see that something is wrong and to give advice is a great service, but to get on the firing line and actually do the remedial work—"Ah! there's the rub." Let us go to the source and correct it by insisting that our town schools train their pupils in such a way that they can labor intelligently with the problems of coordinating the life of the community with the school work, and to give such instruction that will leave the recipient free to make unbiased decisions.

Again, therefore, in the teacher the farmer, as with the merchant, the doctor, the banker and the preacher, is not getting all that he is paying for. But let me remark in this connection that, in Pennsylvania, at least, the farmer is not paying much for his teacher or for his preacher.

It is patent to all of us that the farmers contribute very materially to the support of the five men in a small town who are likely to become leaders. Whenever anything arises in town that demands action, if these men are unafraid, you will find them in the front. Just think for a moment of the men who put over the last Liberty Loan drive, or the United War Workers' Campaign. Was there one resident of a farm who participated actively in the raising of the funds? Who were the men at the front? The town people are getting the benefit of a trained leadership for which they have paid, it is true, but for which they have not been the only ones to pay, and consequently have no implied right to a monopoly of such leadership. Consequently, they are getting the entire benefits of an unearned social increment that should rightly be shared by the surrounding rural

the serious maladjustments in rural society.

Lest you should think that I hold the farmer blameless in this matter, let me indicate just a few things in the life of a farmer which have made the rendering of absolute social justice to a rural population very difficult.

*Farmer Objects to the Idea of Leaders.*—In the first place, the farmer has scorned the idea of having leadership. Thinking himself independent and able to look after his own affairs, he does not admit that there are any reasons for him to look to anyone for guidance. And in as to there being in the average farming community a farmer who would be accepted as a leader—why, you feel as if you had made a social blunder when you ask the average farmer about the leadership in his section. It is the custom for farmers to deny that any one is a leader. The most common reply to a query which brings out this fact is: "We don't need bosses. We are too much American to stand for that."

Of fifty-three communities in eight counties located in the central part of Pennsylvania, surveyed by the Presbyterian Board of Home Missions, this striking fact, relative to leadership in rural sections, was brought out: Twenty-two sections recognized no influential man at all. In the thirty-one remaining communities the influential men were not farmers, as one unacquainted with the facts would expect, but were divided as follows: Five ministers, five merchants, four politicians, four educators, three railroad superintendents, two manufacturers, two miners, two bankers, one judge, one editor, one doctor and one farmer. Think of it! In a section of this State, where agriculture is by far the greatest means of getting a living, the farmer is represented by aliens to his occupation. He is not present in his own councils—another sort of taxation-without-representation condition. No one but the farmer himself is to be held accountable for this among a farming population.

*Poor Business Methods.*—By poor business methods the farmer has invited exploitation. For centuries the agricultural people have been trained to accept the prices of their produce, modified occasionally by dickering, set by the market and to pay the price asked by the market for all goods that they buy. The average farmer does not know whether he is making any money on his investment or whether he is securing a reasonable return for his labor. He cannot tell how much it costs to produce a bushel of wheat or a pound of butter. He keeps few or no accounts and in the business world he is a sort of paradox—not knowing much detail about his business, but still being able to conduct it. His salvation no doubt has been his conservatism which has enabled him to stand in spite of this exploitation by the "sharks in the game."

*Complacent with Conditions.*—Many a farmer is too complacent with conditions. He is satisfied with himself. His father and grandfather have pursued the methods which he is following and got along well. He has had no trouble thus far. He has made a good living for his family, so why should he worry? These "new-fangled" ideas don't appeal to him. He has certain rights which he knows of and others that he knows not of, but he is loath to fight for either because, of course, in his occupation he does not feel the pinch so keenly as does the laboring man who is dependent on a wage. Consequently, he is frequently imposed upon by a great many people that we shall corral under one name and call them "business men."

*Unsocial Treatment of Neighbors.*—The philosophy of the average farmer seems to be to get all he can for his products regardless of the person to whom he sells. Invariably he will charge his very best neighbor more for his wheat or chickens or any farm product than he will receive for them at the warehouse or market. Let me illustrate this point by a few concrete examples. Two years ago the ox-heart cherries were selling for twelve cents a quart in Harrisburg. I chanced to be home for a few weeks during the cherry season and was very eager to get about a bushel of cherries. A farmer living four miles from my home town, and who for twenty years had been one of our closest neighbors while we were on the farm, had the very cherries I wanted. My mother called him up and asked whether we could get some cherries. He said, "Sure, but you will have to pick them yourself. We are getting a load ready for Harrisburg." We went out to his trees, glad to get an opportunity, and picked thirty quarts. Then came the settlement. What do you suppose he charged us for those cherries? Twelve cents a quart, the same price that he received for them after picking them himself, hauling them eighteen miles to Harrisburg, and peddling them around in the streets a half-day. Why, I had a notion to ask him how much I owed him for the privilege of climbing his trees.

The strange thing about it is that this trait is not peculiar to Dauphin County farmers or to Pennsylvania farmers, but is characteristic of unorganized farmers everywhere. I have had the same experience with a farmer in Center County and I have been treated the same by Texas farmers. Just before Pennsylvania Day I was driving along a country road and Mrs. Bressler noticed in a barn lot some mighty fine looking fryers. We went into the house and bought one. I ran it down, weighed it and paid thirty cents a pound for it. The next week I went to the phone and asked a farmer to bring me in a fryer. This one cost me twenty-five cents a pound. Needless to say, I don't drive out to any farmer's house for chickens. Actions like this will forever keep the producers of food and the consumers of food apart. The farmers howl at the middle man and want to get rid of him not with a view, it is safe to say, of dividing his profits with the purchasers of farm products, but rather of securing the lion's share themselves. Many other points might be advanced to show that the farmer himself is responsible to a considerable degree for his not receiving his full share of an unearned social increment, but these few, I think, are sufficient to indicate the general conditions.

To recapitulate, I have endeavored to bring

out the fact that the farmers are not receiving the social rewards that are due them from society, due to two facts chiefly: First, the leadership that results partially because of his trade is frequently curtailed because the merchant, the doctor, the banker, the preacher, and the teacher devote their surplus time and energy, their community activities, to the townspeople. Second, the farmer himself because of his circumscribed idea of leadership, his poor business methods, his satisfaction with himself, and his unsocial treatment of his direct purchasers, has made it impossible for him to receive that which in the eyes of society constitutes social justice.

## ENRICHING THE COURSE OF STUDY

BY LEO L. DRIVER.

Fellow Teachers: Spurgeon was at one time asked how he could preach so many sermons from so many different texts; his reply was, that although he preached a great many sermons from a great many texts, he had throughout them all but one theme and that was "The salvation of the human soul." Likewise, one might say of talks upon school questions, regardless of what the text may be there is but one theme and that is the "Betterment of society."

The greatest educational problem before the American people today is the problem of rural schools. I do not even except the special education of our returned soldiers, tremendously important as that is. Sixty-five per cent. of all those who well be the backbone and body of the next generation, both in country and city, are to be found in the rural school community and attending the rural school. The effect that this generation is to have upon the American people will be determined largely by what you and I do in the rural schools of to-day.

This particular phase of the subject, "Enriching the Course of Study," would imply that we are to either eliminate and substitute or intensify what we already have.

A course of study has been defined as the guide to be followed in teaching the child his present day needs. I should not like to accept that definition of a course of study. Any curriculum that does not keep constantly in mind what the child is to do tomorrow is not broad enough to function as it should. The school is to prepare the child for his duties in society and must be such that it will enable him to meet those duties when they arise. A child must be given a basis in fundamentals that will empower him to exercise his initiative and strengthen his executive and constructive ability to carry out matters suggested by the initiative. There are certain fundamentals required of all people under all conditions.

It has long since been felt that every man must know how to read, to write, to spell and perform some of the simpler operations in mathematics, and the time has been when he who had these attainments could get along fairly well. But the time has long since past when one will not be handicapped, if limited to those simpler things. Life is so much broader and so intense that its needs can be met only by broader and more intense development. It is not merely enough to be able to read, but one should have the habit of reading developed until he has grown in the fields of science, art and literature. Business no longer is conducted in such a simple way that a mere knowledge of the elements of mathematics is sufficient. The successful man must have gone into a study of underlying principles, as well as resulting effects from their materialization.

It is the duty of the school to fit the child so that he may have power to work out for himself the problems which will confront him. You will recall that, when David, having completed the tabernacle, sent his messengers to bring the ark of the covenant. We are told that the ark bearing only the tables of the law was brought up in a new cart. We must bring our course of study in a new cart, but must not lose sight of the fact that it shall still have the fundamental laws. The course of study must appeal directly to the needs of the child as he is to function in the community.

Many of the things now taught in a school could, with a great deal of profit, be eliminated. We suggest that in history a knowledge of the great movements and enough of the detail to fix it in mind, is sufficient. In the place of a great deal of extraneous matter we would put a study of local history. It is certainly important that the child shall appreciate that his community has undergone, in a limited way, practically the same process in growth as has the nation or world grown only with a broader and more far reaching effect. Many a child knows more about the Assyrians and Babylonians than he does of the people who lived in his own state, county or community. He can trace the rise and growth of empires and give the results of such movements upon the history of the world without knowing that very similar important movements have taken place in his own community.

Have your children become acquainted with the history of their community. But little original research on their part will create an interest undreamed of by the teacher who has not tried this. Assign to your eighth year, for example, the task of reporting some interesting bit of history of the community and you will be surprised at the amount of real valuable history that will be obtained. You will get a knowledge of folk lore whose interest will surprise you, and if this policy is carried on for a few years and the reports preserved an invaluable amount of history of your community can be obtained. In this way the child finds, often times, for the first time, that in his community he is a part of a great historical movement. It is a pleasure to the teacher to see the real delight that comes to the child when once his vision is opened to the fact that he is a part of a nation, that things worth while have happened at home and perchance some of his own people may have been factors in that development.

As a grade pupil I was very much interested in history and read of people as if they were some far off, strange impossible characters. Being a boy would be sufficient to explain my interest in war and being a son of a veteran would explain my special interest in the Civil War. My father was an admirer, as well as were all soldiers, of General McPherson and often spoke of him. I shall never forget my delight upon discovering, by being assigned a bit of local history, that General McPherson and my great-grandfather were brothers' children. From that time on history had taken on a new aspect and I felt that personal relation to it. My point here is this, that the teaching of history should be such that the child will fully appreciate that he is a part of history producing factors.

I should advocate the same thing in geography; there are children who can bound the most insignificant countries of Asia or Africa who can not bound their own county. There are children who can tell where the great producing areas of the world are without appreciating that about them is a part of some special area. I know a young man born and reared within five miles of the most beautiful cave in the world that never visited it, although he told me that he had gone on an excursion to visit an inferior cave in an adjoining state.

Teach geography, local geography, so that the child will undertsand and appreciate that his locality is an integral part of a great nation. Let him know that the things about him are as important, although on a smaller schedule, as the things of which he reads. Columbus could not have been happier in his discovery, than I was at one time in discovering that the little creek, running back of our house, was a tributary to a river a few miles away. Tributaries to me were things that were away from home, to be read about and not to be seen. The important thing was, that I had discovered that Mud Creek was really a subject in geography. These may seem to you like commonplace suggestions, and they are, but my observations, and conversations with other superintendents and teachers lead me to believe that it is the exceptional teacher who emphasizes the fundamental principles here discussed, however important the result may be. The same thing might be said of physiology and especially of hygiene and sanitation. It is the duty of the school to teach the child to be a better animal, and that he must care for his animal self. This is especially true of the country children. We have so long thought that the child, reared in the open, free air of the country had such a superior body that we have failed to appreciate that he does not. Recent investigations have shown that the country children are more susceptible to, and have fallen victim to, nineteen of the enumerated common diseases than the children of the cities and towns. This is due, I think, largely to the fact that our course of study does not emphasize the teaching of the simpler things of health and body preservation.

Our play grounds should be in most cases, larger and equipped with much better and more apparatus for play. Some of the simpler things such as giant stride, teeters, swings, horizontal bars and basketball goals can be made with very little experience and expense. Play should be added to our course of study. There is no subject that would produce better and more lasting results than this. The teacher even in the one-teacher school should supervise the play of the pupils. I do not mean, of course, that they should in any way repress the initiative or the spontaneity of the child, that is essential in play, but nevertheless, the teacher can direct the children in this work. All children should love to play and all children who have had the opportunity of playing and have been taught to play will love it. It is a natural expression of childhood; it is in play where the child learns co-operation and co-ordination; it is in play where he best learns to give and take; it is in play that he learns to respect the rights of others and demand a respect for his own; it is in play where he learns to be a game loser and a charitable victor, all of which are essential in human conduct.

Every school should do more or less of prevocational work; no one more than the writer, appreciates the limitations of time and opportunity of the one-teacher school. Neither does anyone more than does the writer, appreciate the opportunity of such a teacher for real leadership. It has been said that the most valuable man is not the one who can do the work of ten, but the one who can get ten men to work. The teacher in the one-teacher school certainly has opportunity to display this characteristic, as often times the children can be taught to help do the things attended to often times by the teacher himself. The children should be given the opportunity of exercising constructive ingenuity and initiative. The girl who has delighted, and where is the real country girl who has not, in making mud pies should exercise that same desire in being taught cooking from a scientific view point. The girl who spent hours in making the dress for her doll, should be taught that the girl in that sense is a large animated doll.

An interest in domestic science can be created in the one-teacher school by the serving of hot lunches. Do not tell me it can not be done, or that you can't do it in your school, for I have seen it done and if you will visit in Chester county with Supt. Bock, you will find it being done successfully in many one-teacher schools. No doubt it is being done in other counties in Pennsylvania. A small work bench may be placed in the corner of the room or in the anteroom, if no other place can be provided and at the same time not interfere with the other school work to amply pay any teacher for attempting it.

There are two policies that may be followed in this prevocational work, one is having the child make models or miniature problems, the other is to have them work upon the real thing. After having tried both plans we are convinced that the latter is by far the better. The boy will get the same training from making a serviceable object such as double-tree, single-tree or any other thing that can be made in such a school, as he

would in making a model and in addition has something serviceable when it is completed.

The same thing is true of the sewing work of the girls. The question naturally arises in your mind as to how the teacher may do this work in addition to the various other required duties, and how may a teacher without any training interest children in these subjects or how will an inexperienced girl teach manual training or an awkward man teach sewing. I suppose the latter part of this might be answered by saying, have masculine women and effeminate men teach these subjects, but I think we will all agree that the school room is no place for either of these two classes of unfortunates.

This problem, however, can be met very satisfactorily by following the instructions as laid out and developed in some of the outlines worked out by companies who make it a business of selling these outlines and the material for the construction of the problems. I know that such systems are condemned on the part of most University professors, who to say the least, know but little of the conditions under which you and I have to work, but I am equally frank in admitting that when we started prevocational work, we started it by this method, because of the scarcity of trained teachers. The results were so satisfactory that it became very easy for us to show the benefits of such work and officials were willing to employ regularly trained teachers. If any of you are interested in knowing the names of some of these firms, I should be very glad to refer you to a few.

Our course of study must also be enriched by the teaching of music and art. I am presuming that each of you have your pupils sing. If you do not, there is one way by which you can perform an enormous benefit to your community and that is by resigning. Any so called teacher who does not have the children sing is not fit to be in a school room. Let me say here that I have visited a great number of schools in Pennsylvania and in each case where the pupils have been asked to sing the response was but little short of electrifying. The teaching of music should not be limited to singing, although, permit me to say, that I feel that that is the greatest part of it. I believe that a victrola or some similar instrument should be in each school and I further believe that it should not be abused by the use of ragtime or any other inferior grade of music. Records of the highest class are so easily obtained that one could not afford to permit any other kind being used.

If a school feels that records are too expensive to purchase many of them, a system of exchanging records can be established between two or three or even as high as five schools. But the victrola can be used in the teaching of music not only in its interpretation but in the actual tone production. There is a firm who has developed a system of instructions to be used that would well pay any of you to get in touch with, if you have difficulty in teaching children to sing. I am not an agent in any sense for any of the things for which I have spoken, at the same time I do believe in the value of these things and feel justified in calling your attention to them, because I know they are workable.

Every child has a right to be taught some of the underlying principles of art. This can not, of course, be done extensively in the rural school but enough of it can be done to create in the child a love and appreciation for art. Every school room should have in it one or two good pictures and the teacher should familiarize herself with the picture and be able to explain it as a piece of art to her school. Take for example the "Last Supper," the child should be shown the symmetry and balance of that great picture; he should also be taught that it is the first great picture using Greek symmetry; he should be taught the story of the picture, the life of the painter, the conditions under which the picture was painted and how it was painted a little at a time and not as one continuous effort; that the central figure of the picture was never completed by the original artist. The child when taught in this way gathers in part a love for that particular picture that will engender a love for other good pictures. As we have said in another paper, the child who sits and faced day in and day out, week in and weak out and year in and year out, such great masterpieces like St. Gaudens, Lincoln, or Hoffman's Christ Child or the Sistine Madonna or the Angelus, the Gleaners or scores of other pictures that might be mentioned, will find his life enriched and made happier by having had this experience. It is by far better, then, that one or two good pictures be purchased rather than many poor pictures or even poor reproductions of masterpieces. The child should never see anything but the best in art and in that way know no other kind. There are many reproductions, however, that are not expensive that are permissible in the school room. Many calendars, especially of the Osborn Company, are reproductions of historical teachings and teachers may in this way get a reproduction of the Ferris paintings. I should not forget the posters that have been put out during the last two years in the various drives. I should like to say that a copy of the one representing Uncle Sam pointing at the individual with the statement: "I Want You," should be in every school room. I should like to also see "The Greatest Mother of the World" of the Red Cross drive in every school room. Lessons of patriotism and sympathy are taught by these great silent reminders in a way that no teacher can afford to lose the opportunity of having them.

Our course of study should have a very great definite plan of presenting the subject of thrift. I do not believe in a special class in that subject, but the teacher should have the subject in mind and teach it at least incidentally or by occasional direct assignment and reference to that particular phase of subject. The W. S. S. campaign has been a tremendous eye-opener as to what conditions have been and to what conditions may be in the matter of thrift. Many a child has been started on a career of saving by the thrift stamp process and no school can afford to be

without these thrift stamp clubs. And it is gratifying to know that the government is to continue the same campaign for the next year and it is predicted by many who have given the subject much thought that such a campaign will continue indefinitely. It has not only taught the children to save, to form habits of thrift but it has broken up many undesirable habits.

There are many other subjects that can be introduced in our course of study not as a regular assigned subject in that course, but as a regular assigned problem of the teacher who executes the course.

After all, Fellow Teachers, let us not forget the fact that in our relation with the pupil, it is the personal equation or the personal influence that we have with the child that stands for the most lasting effect in his life. If we are ourselves industrious the child will be taught it; if we appreciate art and are made better by the study of art our children will in turn learn to appreciate it. If we are lovers of music, even though we may fool ourselves into thinking that we can't sing, if we really love music and get a soul satisfaction from it, our pupils will receive the same inspiration. In other words, our pupils will simply be a reflection of the spirit and attitude that we have put before them. But back of the whole thing, holding complete sway, complete mastery for good or evil, rests with one, who guides, controls and formulates all policies of society and, upon whom more than any other one, rests the destiny of a nation, the teacher.

## ARBOR DAY: NO. 69.

ARBOR DAY comes round like the rest of the fixed holidays, except that to give everybody, old and young, a chance for its observance, we have it twice a year —named by the Governor in the spring and by the State Superintendent of Public Instruction in the fall. As a holiday, however, it has some excellent features peculiar to itself. It gives nobody either headache or heartache; it takes nobody from his work except to do positive good for himself or others; it leaves only permanent blessing in its train; and, as the years pass, it should grow into constantly increasing favor until it shall be universally observed.

The sentiment is spreading, and the schools are aiding in the good work. Indeed, after our Forestry Department, it is from the schools that the greatest result should be looked for. They must implant this idea so deeply that the next generation will be one of tree planters. Comparatively few people now living in Pennsylvania have ever planted a tree! It must be made a thing so common that the exception to the rule shall be, not those who have planted trees, but those who have not done so—and the schools can do this.

Arbor Day exercises in the schools are reminding the children every year that trees are to be planted as well as cut down. Schools of forestry in connection with many of our colleges are cultivating in the hearts and minds of the people a love for and an understanding of trees. The State of New York has a law providing for the planting of trees along country roads, and the Legislature of Pennsylvania provides by law that, for every two fruit, shade or forest trees which the property owner shall transplant to the public highway in front of his own premises, he shall be allowed an abatment of $1 on his road taxes. The St. Louis Civic Improvement League has issued simple printed instructions about tree planting and its value to the city. A committee of the Chamber of Commerce of our own city of Lancaster has planted within the past few days fifty long-lived trees upon the Lincoln Highway with the purpose of attracting attention to this good work.

Modern Americans could learn much from the memorial established by a Japanese Prince of generations ago. From his own forest he gave thousands of trees to be planted along two roads leading to Nikko, where the body of the great General and law-giver, Iyecasu, was interred. Many who visit Nikko may forget the loveliness of the mountain scenery, the waterfalls and rushing streams, the soft low tones of the bells, the odor of incense and the chanting of the priests, but few will forget their twenty-mile ride, which has been described to us by a friend, beneath the overarching branches of these stately trees. What more beautiful memorial than this, which benefits rich and poor alike?

The call of Governor Sproul to plant long-lived native trees as living memorials to our fallen soldiers on our recent spring Arbor Day was heard and heeded in all parts of Pennsylvania. What more fitting memorial than a noble tree named in honor of the worthy dead? You heed that call to-day. You pay high tribute on this day to four or your heroic sons who have gone forth from this sacred place and given their all in the cause of God and humanity. You also do honor to that great man gone —perhaps the foremost of our public men —a Twentieth Century Knight of the Round Table of good King Arthur—Theodore Roosevelt. What you plant will aid in carrying the memory of these brave men to other times.

*An address, April 27, 1919, at Grace Lutheran Church, Lancaster, Pa., by Dr. J. P. McCaskey, at the planting of Memorial Trees in honor of four members of the church who have lost their lives in the Great War, and of Theodore Roosevelt.

"Having fought a victorious foreign war," says the Governor, "we are now filled with the spirit of the memorial tree in honor of our soldier dead, victims of a great and cruel contest, held in tender memory by the public mind. It is a patriotic impulse to preserve the names of those heroes who made the supreme sacrifice, in a long-lived vigorous tree, capable of outliving the centuries, to bless those who are to come by its cooling shade and its added beauty to our land. For this high purpose no short-lived tree should be taken. The lofty spirit of patriotism is not satisfied with anything but that of the most enduring character. Our native white oak, red oak, pin oak, scarlet oak, elm, sugar maples, black walnut, the pines and the spruces, commend themselves for memorial purposes. The grounds about many of our schools are ample for tree-planting, and the pupils ought to be encouraged to plant memorial trees in honor of the heroes of the neighborhood. These children should also be made responsible for their proper care and protection. The experience had and the lesson so learned will be of an enduring kind, serviceable to the pupils as well as helpful to the community."

The Governor urges, also, the restoration of the forests, in which direction our Forestry Bureau at Harrisburg has already done much good work, with large promise for the future of the State—and the care and conservation and increase of our failing water supply.

Four million American trees will grow in France to replace the destruction of war—three trees for every Frenchman who was killed in battle. Col. Graves, who commanded the 9,000 American foresters who served in France during the war, says these troops will come back home far better foresters than when they went away. They learned something of the science of forestry in France, where tree-culture began to be a science centuries ago, in the time of Charlemagne. This year it is proposed by the Bureau of Forestry, under the direction of Commissioner Conklin, to plant seven million forest trees in Pennsylvania. The State now owns more than a million acres of forest land, nearly all of which was secured by Dr. J. T. Rothrock, of West Chester, now eighty years of age, in whose honor his successor in this important office, Mr. Conklin, planted a few days since a group of eighty oak trees on the Caledonia Furnace reserve in Southern Pennsylvania.

April 16, 1885, Governor Pattison and State Supt. E. E. Higbee put this day formally upon the State calendar in its first memorable observance at the State Normal School at Millersville. On the morning of that day we had our programme and tree-planting at the Lancaster High School, where Dr. Higbee read a notable paper on "Arbor Day With the Children." This is our sixty-ninth observance of the day in Pennsylvania.

When we left the old High School in 1906, we had observed the day forty-five times, with red-letter programmes of music and literary exercises. On forty-four of these days we planted, each day, more trees than there were pupils enrolled, and on the death of Dr. Higbee, our Arbor Day State Superintendent, we planted hundreds of La France roses, some of which were blooming twenty years thereafter. Bloom on, ye roses, that can never be scentless or dead!

It is estimated that there are nearly 500,000,000 acres of growing forest in the United States. About thirty-five cubic feet of wood is the average product of an acre. It is also estimated that the average consumption of wood is about twice that amount. Hence the importance of forestry as a national industry. It is second only to agriculture.

The poet looks deeper than the average man. We remember well when, fifty years ago and more, this striking description, written by Dr. Holmes, appeared in the Atlantic Monthly:

"I have something more to say about trees, and I have brought down this slice of hemlock to show you. Tree blown down in the year 1852. Twelve feet and a half round, fair girth—nine feet where I got my section, higher up. This is a wedge, going to the center, of the general shape of a slice of apple pie in a large and not opulent family. Length, about eighteen inches. I have studied the growth of this tree by its rings, and it is curious. Three hundred and forty-two rings. Started, therefore, about A. D. 1510. The thickness of the rings tells the rate at which it grew. For five or six years the rate was slow, then rapid for twenty years. A little before the year 1550 it began to grow very slowly, and so continued for about seventy years. In 1620 it took a new start, and grew fast until 1714; then, for the most part, slowly until 1786, when it started again and grew pretty well and uniformly until within the last dozen years, when it seems to have got on sluggishly. Look here! Here are some human lives laid down against the periods of its growth, to which they correspond. This is Shakespeare's. The tree was seven inches in diameter when he was born; ten inches when he died. A little less than ten inches when Milton was born; seventeen when he died. Then comes a long interval, and this thread marks out Johnson's life,

during which the tree increased from twenty-two to twenty-nine inches in diameter. Here is the span of Napoleon's career; the tree doesn't seem to have minded it. I never saw the man yet who was not startled on looking on this section. I have seen many silent preachers—never one like this. How much more striking would be the calendar counted on the rings of one of these awful trees which were standing when Christ was on earth, and where that brief mortal life is chronicled with the stolid apathy of vegetable being, which remembers all human history as a thing of yesterday in its own dateless existence."

Teach your boys and girls this fine poem by Lucy Larcom, "He Who Plants a Tree." It is very easily done by using the keywords, hope, joy, peace, youth and love, to fix the order of the stanzas and to give the leading thought in each of them.

He who plants a tree
Plants a hope;
Rootlets up through fibres blindly grope
Leaves unfold into horizons free.
So man's life must climb
From the clods of time
To the heavens sublime.
Canst thou prophesy, thou little tree,
What the glory of thy boughs shall be?

He who plants a tree
Plants a joy;
Plants a comfort that will never cloy,
Every day a fresh reality.
Beautiful and strong,
To whose shelter throng
Creatures blithe with song.
If thou couldst but know, thou happy tree,
Of the bliss that shall inhabit thee!

He who plants a tree
He plants peace.
Under its green curtains jargons cease,
Leaf and zephyr murmur soothingly;
Shadows soft with sleep
Down tired eyelids creep
Balm of slumber deep.
Never hast thou dreamed, thou blessed tree,
Of the benediction thou shalt be.

He who plants a tree
He plants youth;
Vigor won for centuries, in sooth;
Life of time that hints eternity;
Boughs their strength uprear,
New shoots every year
On old growths appear.
Thou shalt teach the ages, sturdy tree,
Youth of soul is immortality.

He who plants a tree
He plants love;
Tents of coolness spreading out above
Wayfarers he may not live to see.
Gifts that grow are best,
Hands that bless are blest,
Plant; life does the rest!
Heaven and earth help him who plants a tree,
And his work its own reward shall be.

## SCHOOLMEN'S WEEK.

### RECENT MEETING AT THE UNIVERSITY OF PENNSYLVANIA.

THE Sixth Annual Schoolmen's Week convention held recently at the University of Pennsylvania, exceeded all records both for attendance and interesting discussions. The total number of registrations was 1,240, an increase of more than 25 per cent. over the best previous record. It was estimated by the registration committee, based on the attendance at the various conferences and lectures, that more than 2,000 persons from all parts of the state and adjoining states attended the meetings.

The program was distinctly a constructive one, some of the leading educators of the country being among the speakers. Among the most notable features was the report of the Bureau of Educational Measurements of the University, presented by Dr. Harlan Updegraff, Director, and L. A. King, Assistant Director. The announcement that this Bureau has superintended the giving of 200,000 tests in arithmetic and 70,000 tests in silent reading in the schools of Pennsylvania since September, 1918, made a deep impression upon the visiting schoolmen. Not only was this department of the University's School of Education warmly commended, but a more extensive use was urged of this system. Of the 200,000 tests made in arithmetic, 100,000 were in the Philadelphia schools. This was the first time that the school authorities of Philadelphia had made such tests and they naturally turned to the University to have them supervised.

The formulation of a forward state educational movement was another important outcome. It included increase in salaries; higher standard of teachers and teacher training; improvement of rural schools, including consolidation and a careful consideration of the county unit; reorganization of the courses of study in state normal schools, more liberal appropriation for their support and the fixing of standards for admission thereto. The features of most immediate significance in the proposed forward movement in education were the high standards set for the new superintendent of public instruction and the resolution in favor of a state survey, as stated in Paragraph IX of the resolutions. A feeling that the new state superintendent must be protected in the performance of his duties from interference by political, industrial, financial, or other selfish interests was strong. This was the first time that a body of representative school

men in Pennsylvania ever expressed themselves as favoring a state-wide survey. Their desire was that it be placed in the hands of experts under the direction of the state superintendent of public instruction, these experts to be chosen both from without and within the state.

Another important contribution was the code of professional ethics. It was the product of a committee of five working under the chairmanship of Dr. George G. Chambers, director of admissions of the University, during the past two years. The committee studied reports of many of the other professions and the digest of the professional codes of teachers in various states and cities, presented by Dr. Bagley upon the Schoolmen's Week program two years ago, at which time the movement for the professional code in Pennsylvania was started. The code as approved was forwarded to the president and the executive committee of the Pennsylvania State Association with the request that its consideration be given a place upon the program of the Association next December. It is hoped that this will lead to the adoption of a professional code of ethics for the entire state.

Among the reports of studies already under way and which will be further continued were: (1) studies in the field of educational guidance, under the direction of Dr. Arthur J. Jones and his seminar class in secondary education, and (2) consolidation of schools by Dr. J. George Becht and a committee of five county superintendents, with Thomas A. Bock, superintendent of Chester county, as chairman. New studies were inaugurated in three different topics, (a) distribution of state aid in order to assist local districts to increase teachers' salaries by Dr. Harlan Updegraff, (b) reorganization of high school courses of study, (c) the county institute by Carmon Ross. Investigation in each of these fields already begun will be continued and the results will be made the basis for action at some future meeting of Schoolmen's Week.

Several points were clearly brought out in the conference on Educational Guidance.

1. Guidance is one of the most important aspects of education.

2. Every school should organize its work so as to provide adequate guidance for every child.

3. One important part of guidance is that concerned with the vocations. This consists in guidance in the choice of vocations, in the training necessary for the vocation and in securing the job.

4. Every high school should have a definite course in the study of occupations, which should be required of all students. The use of moving pictures as an aid in this course was strongly advocated.

5. Guidance does not consist in deciding for the child what he shall do, but in providing him with the necessary data so that he can make an intelligent choice.

6. Psychological tests are already of considerable assistance in guidance, but have not yet reached a stage of development where much reliance can be placed upon them for diagnosing the abilities of immature individuals which would make them successful in different occupations.

In connection with the conference there was a very interesting exhibit of methods now in use in different places, of various kinds of tests and of cards used for recording data necessary for intelligent guidance.

In addition to the above topics were three different programs dealing with the various aspects of the general topic of Americanization and a program upon the reorganization of our schools to meet the present emergency.

Among a large number of speakers from outside the state were: Dr. P. P. Claxton, Commissioner of Education, Washington, D. C.; Dr. George H. Betts, School of Education, Boston University; Dr. W. S. Monroe, School of Education, University of Indiana; Dr. William H. Kilpatrick, Teachers' College, Columbia University; Dr. Henry C. Morrison, State Board of Education, Hartford, Conn., and Dr. Thomas H. Briggs, Teachers' College, Columbia University.

The chief executive officers of the meeting were Harlan Updegraff, Chairman of the General Committee; Arthur J. Jones, in charge of secondary school conferences, and L. A. King, Secretary, to whom we are indebted for this report of proceedings.

The following resolutions are the most important adopted by the Schoolmen during the general session on Saturday morning:

1. We, the members of your Committee on Resolutions, respectfully present the following articles of belief for your consideration and approval:

2. That we approve and highly appreciate the work of the School of Education of the University in furthering the extensive use of measurements in arithmetic and reading and recommend to schoolmen and school officials their earnest cooperation in this movement; we urge as a definite plan and aim, always to be kept in view, the application of the results of the standard tests in devising improved methods wherever unsatisfactory results are shown; we further commend the purpose of the University to assist in formulating remedial measures, and pledge our coopera-

tion in the furtherance of this and in the use of other measurements; we express sympathy with the movement to reorganize, systematize and standardize courses of study for high schools, and recommend that a committee be appointed to continue this study, or assist in any cooperative movement which has this in view.

3. We commend, as being in the right direction, the efforts being made to determine the scientific equalization of assessments and taxes, and likewise the more equitable distribution of state school funds. We, therefore, recommend that these studies be continued.

4. That we endorse the movement for the increase of teachers' salaries in the state as now embodied in the Woodruff bill, and that we urge support for this bill upon the Legislature from our respective districts; we further believe that it is incumbent upon school men to urge that higher standards of teaching and teacher training should follow this increase.

5. We believe that the problem of the rural schools is fundamental and paramount to any other. For this reason we urge that some constructive policy of dealing with this problem be worked out by those in authority to the end that some specific solution be reached.

6. That the problem of an adequate supply of properly trained teachers should have attention with respect to the following phases of the relation of our normal schools to its difficulties:

*a.* The fixing of standards for the admission of candidates for training in the normal schools.

*b.* More liberal appropriations for the proper support of normal schools.

*c.* Reorganization of the courses of study to the end that they become more definitely schools of professional education, and that they more specifically train teachers for the various grades and kinds of school work.

7. That the study and investigation of Teachers' Institutes in Pennsylvania be encouraged and continued with the view that their status and place in the educational program of the state at present be definitely determined.

8. That we heartily endorse the expressed attitude of Governor Sproul in his desire to select as the next State Superintendent of Public Instruction a person so qualified by training, experience and vision that he may place the public school system of Pennsylvania among the foremost; that to secure such a person it will be necessary not only to pay a salary equal to that paid in any state, but to empower him with untrammeled powers of administration; that as soon as feasible after the new State Superintendent is chosen plans be considered for an impartial, scientific, helpful survey of the schools of the state, conducted by persons eminently qualified for making such a survey.

9. That we herewith record our appreciation of the long and honorable service of the late Dr. Nathan C. Schaeffer, particularly his scholarly attainments, his high standards of manhood and public service; and his practical achievements in bettering the public schools of Pennsylvania during his long and dutiful career as State Superintendent of Public Instruction.

## LOOKING FOR BIRDS.

### SAW EIGHTY-SIX SPECIES OF BIRDS IN ONE DAY.

IN the valleys of the Lititz Creek, Hammer Creek, and Upper Chiques, a small section of Lancaster County, on May 18, 1919, between 7.30 a. m. and 8.30 p. m., Professor Herbert H. Beck, of Franklin and Marshall College, and Abraham B. Miller, a first-class Boy Scout and a member of the Freshman Class in College, made a count of birds seen within a single day, which probably establishes a record for Lancaster County, at least for the regions other than the river hills. Eighty-six species were identified by these enthusiasts in bird lore and bird study. The lists of shore birds and warblers are especially interesting and noteworthy. Their equipment on this hunting expedition was not a barbarous shot-gun, but a field glass for each that was always ready and a live bird dog to keep their game on the wing. What a boon it would be to the boys and girls if our normal school graduates knew and could teach the birds, and trees, the blooming plants and the stars! Some day ability to do these things will be recognized as a good reason for increasing the salary of teachers. The list of birds seen on this bright May day is here given:

Green Heron, Night Heron, Yellow-legs, Greater Yellow-legs, Solitary Sandpiper, Spotted Sandpiper, Least Sandpiper, Upland Plover, Kildeer, Bob White, Dove, Sharp-skinned Hawk, Cooper's Hawk, Sparrow Hawk, Red-tailed Hawk, Turkey Vulture, Black-billed Cuckoo, Kingfisher, Red-headed Woodpecker, Downy Woodpecker, Flicker, Chimney Swift, Kingbird, Crested Flycatcher, Blue Jay, Phoebe, Wood Pewee, Crow, Starling.

Bobolink, Cowbird, Red-winged Blackbird, Meadow Lark, Baltimore Oriole, Orchard Oriole, Purple Crackle, Goldfinch, Vesper Sparrow, Field Sparrow, Song Sparrow, Least Flycatcher, Grasshopper Sparrow, Chipping Sparrow, White-throated Sparrow, Towhee, Cardinal, Indigo Bunting.

Scarlet Tanager, Purple Martin, Barn Swallow, Rough-winged Swallow, Red-eyed Vireo, Warbling Vireo, Yellow-throated Vireo, White-eyed Vireo, Redstart, Oven Bird, Yellow Warbler, Black-throated Blue Warbler, Myrtle Warbler, Black Poll Warbler, Magnolia Warbler, Wilson's Warbler, Parula Warbler, Cape May Warbler, Tennessee Warbler, Nashville Warbler, Bay-breasted Warbler, Canadian Warbler.

Blue-winged Warbler, Chestnut-sided Warbler, Maryland Yellow-throat, Chat, Northern Water Thrush, Thrasher, Catbird, House Wren, Tufted Titmouse, Ruby-crowned Kinglet, White-breasted Nuthatch, Wilson's Thrush, Wood Thursh, Gray-cheeked Thrush, Bluebird, Robin.

## FAREWELL—AND HAIL!

WHAT a difference between a coming and the going! The departure was enshrouded in mystery. The men were forbidden to name the hour of leaving, the place of embarkation, the name of the vessel taking them to France. In fact, the vessel under its Joseph's coat of camouflage was usually given a number instead of a name. Barbed-wire entanglements warned off the public, as if it were No Man's Land. The sentry with the bayonet kept his vigil at the barred gate.

Often the men marched off in the dead of night. There was no band music, no cheering. The flowers were absent and holiday exultation or family lamentation was not in evidence. The sailing place was only "an Atlantic port"; there was no advertisement in the newspapers or anywhere else of the ship's sailing; schedules were disrupted and dates and hours that once were firmly fixed were matters of vague conjecture. Even the magnitude of the preparation behind the lines could not be described in detail or in specific terms; the trail of the blue pencil and scissors of censorship was everywhere in the land. The public appetite for news, however eager, had to be denied satisfaction, in the interest of those whose lives would have been jeopardized by the general dissemination of facts allowed in peace times.

But to-day what a change is manifest! The newspapers are permitted to list boldly and freely the places and dates of sailing, the names of the ships, the military units that embark, with the number of officers and men. The latest information as to the time and place of docking is instantly made available. And when the men land, there is nothing secretive about it. The whole joyful nation is much aware of it, and in remote places preparations for the jubilee go blithely forward. When they went away all was silence, mystery and the solemnity of those that went to keep their rendezvous with death. Now at the return the flags hang out, the music is in the air, the crowds are massed, work is paralyzed, the holiday-makers have it their own way. All that one sees and hears expresses the general joy that under the glorious aegis of Victory there is no need any longer to hide military secrets. We are free agents again to show our boys one by one as well as rank by rank what we think of them, and they rejoice in their individuality regained.—*Ledger.*

## CANST THOU GUIDE ARCTURUS?

BY E. W. MAUNDER.

ARCTURUS was the star that first taught men that the so-called fixed stars had movements of their own. He seems to move more swiftly across the sky than any other of the brighter stars. True, the unaided eye could never detect its motion in a single year, or even in several years; but its drift is most perceptible in a telescope, and in the course of generations its change of place is rendered very evident. In eight hundred years it will traverse a portion of the sky equal to the diameter of the full moon; in the two thousand years which have elapsed since the date of the first catalogue of which we know—that of Hipparchus—it has traveled two and a half times that distance.

Already we have drawn upon three countries for our information. The "annual proper motion," the apparent distance in the sky, that is to say, which Arcturus traverses in a year—has been deduced by a German astronomer from a comparison of a Greenwich catalogue of the last century with a Russian one of this. For further information we cross the Atlantic, and Dr. Elkin of the Yale College Observatory informs us in his annual report of date June 7, 1888, that the "annual parallax" of Arcturus is "+0.018 deg."

Dry figures these, but their meaning is a marvelous one. They mean that, as viewed from the distance of Arcturus, the entire orbit of the earth around the sun would look no larger than the circumference of a half-penny at a distance of ninety miles. Note that it is not the huge bulk of the earth, nor even that of the sun, which is a hundred times greater in diameter, which would appear so infinitesimally small when seen from Arcturus, but the entire orbit of the earth, 186 millions of miles across.

It may be asked how we know how large the orbit of the earth would be as seen from Arcturus. We know it because the real change in the position of the earth as it passes in six months from one side of its

orbit to the other, makes the star appear to change its place by a very small amount. The star seems to travel round a tiny orbit in the year, and this orbit that it seems to follow must be just the same apparent size as seen from the earth, as the real orbit of the earth would be as seen from Arcturus. As, however, the star has a real forward motion of its own, the actual effect of the change of the earth's place on the apparent motion of the star is not, as would be the case if the star were really at rest, to make it seem to revolve in an orbit, so much so as to make it appear to follow a winding, rather than a straight course.

The distance of Arcturus would be marvel enough if that fact stood alone. It would speak of a universe of all but infinite vastness, a universe too great for our feeble thought ever really to fathom. But two other facts stand out which set the marvel higher. The one is the exceeding swiftness with which Arcturus is seen to move, the other the brightness with which it shines. Taking its annual motion at the figures Dr. Elkin has adopted, we find that the distance the star travels in the year, as seen from our standpoint, is 127 times as great as the distance between the earth and the sun as seen from the standpoint of Arcturus. Twenty-four thousands of millions of miles in a year; 374 miles in every second of time.

No work of man, no terrestrial experience, can give us an idea of a speed like this; and even in comparison with the velocities of other bodies in the solar system, it appears remarkable. Let us in imagination take up a station at a convenient height above the earth's orbit, and at a distance of 900,000 miles in advance of it. At that point we should see our earthly home shining in the distance about the size of the full moon as it appears to us now. Ere long we should notice that it was growing larger and larger as it hurried forward. In six hours it would have doubled its diameter, in three hours more it would have doubled it again. Soon the whole heaven would be filled by the advancing globe; the hemisphere first presented to us would pass under, and some thirteen hours after we first saw it, it would rush past us. One minute would barely elapse while London and its spreading suburbs were passing by. And yet in comparison with the speed of Arcturus the earth travels at a snail's pace.

We cannot calculate certainly the size of Arcturus. It is very, very many times larger than the sun, and, if its surface shines no brighter, it must be more than a million-fold as large—large enough to fill up all the space between us and the sun. It is the swiftest, and, so far as our information goes, the largest star of which we yet know; at once the Titan and the winged Mercury of the celestial orbs.

"Canst thou guide Arcturus with his sons?" We cannot guess the motive power which drives the great star at such a speed. We recognize the compelling force urging our world along; but gravitation can give us no clue whatever to the flight of Arcturus. We can only say "It is the will of God."—*Sunday Magazine.*

## NATHAN C. SCHAEFFER.

BY SUPT. E. M. RAPP.

NATHAN C. SCHAEFFER is dead. Berks county's most illustrious son, Pennsylvania's greatest educator, one of God's noble men. He has been the greatest influence in the shaping of our life. He has been our leader, our counselor, our teacher, our friend. His spirit was an adoring and beautiful flame. There was no guile in his soul and to know him was to love, honor and trust him. To speak disrespectfully of him seemed like sacrilege. He was a thinker of thinkers, and a most ardent seeker of the truth. He exemplified the injunction: "And ye shall know the truth," and, "the truth shall make you free." He would have made a noble knight in the days of King Arthur, a fair and worthy companion of Galahad. His close friends sometimes called him the "Pennsylvania Limited," because in his public addresses he started on time and always reached the "terminal" on schedule time. He never trespassed upon the time of another speaker. His sense of fitness and proportion would not permit it. He will be remembered longest, not on account of his profound scholarship, not on account of his unimpeachable and unassailable integrity, not on account of his pleasing personality, but because in season and out of season he championed the cause of childhood. He served his fellowman, and, therefore, served God. He was very near to the heart of the teachers of Pennsylvania. He helped to fight their battles and plead their cause at all times and at every opportunity. Their respect for him was honest and sincere. He has gone to his reward, but the good he did lives after him. Friends and opponents with equal earnestness cry out, "God rest his soul." Upon his tomb there can be inscribed an epitaph, than which there can be no nobler, no prouder, no truer tribute: "A Champion of Childhood and a Teacher of Teachers."

# EDITORIAL DEPARTMENT.

TWO meetings of the Executive Committee of the State Educational Association, on March 8th and May 10th, have been called by President Downes in the rooms of the State Department in preparation for the next annual meeting in December at Philadelphia. At the second of these meetings the heads of the departments and round tables were also present, and a very wide range of speakers and topics of interest was discussed. Dr. Downes is again in good health, and thoroughly alive to the work in hand. He is busy shaping a varied and excellent program. Philadelphia is making all necessary arrangements on a liberal scale, and assures a great meeting.

In a circular to the teachers and school men of the State President Downes says:

"The next meeting of the Pennsylvania State Educational Association will be held in Philadelphia, December 29, 30 and 31, 1919, and January 1, 1920. The Hotel Adelphia has been engaged as headquarters, and there will be a special room here for the meetings of committees of the Association. The executive committee recently met with the heads of the various departments to discuss the program, which is now well under way.

"Our last convention has been regarded by many as one of the best in the history of the Association. Unsurpassed speakers, a well-balanced program, and a record enrollment helped to bring this about. I am sure that the exceptional services rendered by our Past-President and his official advisors are duly appreciated by the great body of teachers, of whom the membership of the Association is largely constituted; and I am equally sure that the assistance of the teachers of the state, who so generally responded to enrollment appeals, or who otherwise contributed to the success of the meeting, is fully appreciated by the officers in charge of the program.

"As president for 1919, I face my responsibilities with no small degree of trepidation. The increasingly interesting programs of recent years and the rapidly increasing enrollment have indicated from year to year the degree of our expectations. The fulfilment of unusual expectations is the task which the officers this year have before them. The accomplishment of this end will require united interest and effort. The measure of your cooperation will determine the measure of success attending our next meeting. The president of the Association is only the delegated leader. Every superintendent, every principal, every teacher, must help, if the highest results are to be achieved. On behalf of the officers and the executive committee I appeal for your full sympathy and support during the year."

## DR. THOMAS E. FINEGAN.

### STATE SUPERINTENDENT OF PUBLIC INSTRUCTION OF PENNSYLVANIA

ON May 20th, Governor Sproul announced that Dr. Thomas E. Finegan, deputy commissioner of education of New York, had accepted the post of superintendent of public instruction of Pennsylvania and that his name would be sent to the Senate. On Tuesday, May 27th, this important nomination was duly received and confirmed by the Senate. The Governor said that he had selected Doctor Finegan because he considered him better qualified than any man he knew for the particular problems of organization and supervision required in Pennsylvania. Doctor Finegan has been a specialist in the management of rural schools and has had twenty-seven years' experience in the department of education in a state whose problems are perhaps more like those of Pennsylvania than of any other state. He also expressed satisfaction over the spirit of appreciation and cooperation which has been indicated by various prominent Pennsylvania educators and the general approval of Doctor Finegan's selection.

"I am personaly acquainted with Doctor Finegan," said Dr. John P. Garber, superintendent of schools of Philadelphia. "He is a man of tact and ability. He has had a great deal of experience in educational work. During the absence of Doctor Finley, commissioner of education in New York, in connection with war work, Doctor Finegan had complete supervision over the affairs of public education in that state."

"Doctor Finegan is a good man," said Dr. Frank P. Graves, dean of the school of education of the University of Pennsylvania. "He is known to all educators and is a man who is very capable of filling the position of state superintendent of public education. He has been responsible for most of the good legislation for schools in New York. He has been especially active in obtaining improvements in rural schools. He has procured better salaries for teach ers in these schools and has brought about

a better supervision of rural schools by raising the state requirements for teachers' certificates."

"I know Dr. Finegan," says Dr. S. E. Weber, of Scranton, "and expect great things from him. He has been a moving spirit in the New York State Department of Education for the past ten years."

Doctor Finegan's assumption of the position of superintendent of public education of Pennsylvania will mark his first departure from New York state, where he has hitherto spent his life and career as an educator. He was born in Fulton, Schoharie county, N. Y., in 1866. He was graduated from the State College for Teachers, Albany, N. Y., in 1889, and was admitted to the New York bar in 1894. In the same year he received the degree of master of arts at Hamilton College. In addition, he holds degrees of doctor of philosophy and doctor of laws, subsequently conferred upon him by the State College for Teachers, Colgate University and Hamilton College.

He was a teacher in the public schools of New York state for six years. He was later principal of the public schools at West Fulton, N. Y., from which position he advanced to that of school commissioner of Schoharie county. In 1892 he became supervisor of examinations of the New York state department of public instruction, occupying this position until 1904, when he was appointed chief of the law division of that department. He was assistant commissioner for elementary schools of New York state from 1908 until 1915. Since then he has been state deputy commissioner of education. He is a vice-president of the National Education Association.

A special despatch from Albany to the Philadelphia Ledger of May 21st presents these facts of interest:

Dr. Thomas E. Finegan, deputy commissioner of education of the State of New York, left to-night for Harrisburg, where, tomorrow, he is to have a conference with Governor Sproul in reference to his appointment as superintendent of public instruction of Pennsylvania. He is to confer on the budget proposition. He announced this afternoon that he had accepted the appointment which had been tendered him by Governor Sproul and would take up his duties September 1 next. Meanwhile he is to be in Harrisburg more or less and will look over his new field of activity. His resignation from the position of deputy state commissioner of education is effective today. Not until ten days ago did Doctor Finegan know he was looked upon as a successor of Dr. Nathan C. Schaefer, deceased, who was his warm, personal friend. Outside of Dr. John H. Finley, the present commissioner of education, few men are better known in educational circles than himself.

"Before I say what I shall do," said Doctor Finegan, "I would like to look over the schools in the state of Pennsylvania. I expect to take up my work as soon as I have had a rest, but it will be the 1st of September before I take hold actively."

The selection of Doctor Finegan came unsought, so far as himself was concerned. It is known, however, that for some time the authorities in Pennsylvania have been looking up his work, and finally decided that he was the man wanted. Among the leading progressive educational movements which have been inaugurated largely through his efforts are: A compulsory continuation-school measure. A state-wide minimum-salary bill, appropriating $5,300,000 to aid the localities in paying the increased salaries. Inauguration of the plan of licensing teachers by the state, raising the minimum age of teachers from sixteen to eighteen years. Rebuilding the seven normal schools of the state and the state college for teachers. The adoption of a state-wide teachers retirement law. The abolition of the old political office of school commissioner and the substitution of the rural district superintendent therefor. The institution of a program of health instruction and medical inspection in the schools. Making the city superintendent of schools a professional officer and conferring upon him full power in relation to the professional affairs of a city school system.

Doctor Finegan has spoken and written extensively on educational subjects and was the advisory editor on education for the new American Encyclopedia. In 1918 he was honored by being elected president of the department of superintendents of the National Educational Association.

In the "Bulletin to the Schools" for May 15th, from the Department of Public Instruction, in which Commissioner John H. Finley speaks very earnestly of the school legislation recently approved by Governor Smith, he adds this pleasing paragraph:

"Our rejoicing over the year's legislation which is here reported would be almost unmixed if it were not that at this very end comes the prospect of our losing Doctor Finegan to the state of Pennsylvania. He has just been called to the commissionership of education of that state, and with a salary and freedom of action which make it impossible for him to decline. There is no opportunity to speak at this last moment of his great service to the

schools of the state, but you will wish to write him and let him know how much you have as a teacher or as an officer appreciated what he has done. That will be better than anything that we could say here."

The most far-reaching act of Governor Ritner in 1835 was the appointment of the young man, Thomas H. Burrowes, who had been chairman of the state central committee, as his Secretary of State. He was not yet thirty years old, and the youngest man who has ever held this position at Harrisburg. It was an appointment not satisfactory to the leaders of his party who thought an older man should have been given that high office. So he organized the new school system under the Breck law of 1834, and when fairly launched in this great work it became the one absorbing thought, the master passion, of his life for thirty-five years, until his death in 1870. As Samuel was led to the choice of the youthful David, the Shepherd King so, we think, was Ritner led to the young man Burrowes.

The most far-reaching act of Governor Pattison's administration was doubtless the appointment in 1893 of Nathan C. Schaeffer as Superintendent of Public Instruction—and the twenty-six good years that followed for the schools of the state. We trust that, under the same wise Providence, Governor Sproul has been led in his choice of Thomas E. Finegan. He is a school man of highest repute and will soon be widely known and cordially welcomed everywhere in Pennsylvania.

Governor Sproul has had but one thought in filling this high place under our State Government—to secure the best man that could be had in the country at large on a salary of twelve thousand dollars a year. The salary of the commissioner of education in the state of New York is ten thousand.

## HOMES FOR TEACHERS.

THE parsonage is usually under the shadow of the church. The school manse, the Home of the Teacher—almost as much needed as that of the preacher—is coming soon in the better days ahead. Senator John G. Homsher, of Lancaster county, has introduced in the Senate at Harrisburg, a bill providing that school districts of the fourth class may purchase or build dwelling-houses for principals, teachers and janitors, in cases where such dwellings are deemed necessary by the board of directors.

The bill was introduced at the instance of certain school districts where the question of finding a dwelling has been a serious obstacle in the way of procuring such services. In fact, in many townships and in the smaller boroughs, it has become an increasingly difficult proposition for unmarried teachers to find boarding places. Often a principal or teacher with a family cannot accept a position and find a comfortable home within easy distance of the school.

Senator Homsher says that in such districts it has been observed that much of the general efficiency of the schools is dependent upon the principal and teachers residing or boarding in proximity to the school. The principals or teachers who merely come on Monday morning from a point without the neighborhood of the school and leave again on Friday evening, being thus removed from the acquaintanceship of the patrons and the social life of the community, cannot do their best work for the schools. In the case of janitors it is almost imperative, especially in high schools or consolidated schools, that the person who attends to the school property should reside nearby, and if there is no dwelling available, there is nothing to be done but to buy or to build.

"The Brown Mouse," a story by Herbert Quick, of an unusual schoolmaster, is worth reading for its suggestion to thoughtful people. Mr. Quick believes the largest single problem in American rural life is rural education, because it has to do with that third of our people who feed the other two-thirds. He tells here the story of a Lincoln-like farm hand, a genius in blue jeans, who upsets an Iowa district, and in the end a whole countryside with a new kind of country school.

In Volume 17 of the Pennsylvania School Journal, July, 1868—more than fifty years ago—Dr. Thomas H. Burrows says in an article on this subject, "And, rising still higher, to the rural home of the married teacher, with all the moderate comforts, appliances and adjuncts of domestic life around—comfortably furnished home, good garden, cow and poultry, pigs in the pen and fruit on the trees—we find him in the position in life which Providence intended, and to which the common rights of society entitle him.

"Were we a millionaire such as Girard or Astor, and resolved to dedicate our wealth so as to do most good to the work of the schools, through the teachers, we would devote it to the establishment of a comfortable permanent dwelling house with sufficient garden ground, in connection with every common school in the state—thereby

both settling down and raising up the Profession of Teaching."

Senator Homsher has opened up what we think a great question. He points the way of progress in a direction in which people have steadily refused to look or to go. Dr. Burrowes had the vision, and this journal has repeatedly urged the home for the teacher as a wise policy in progressive rural districts, in the hope of attracting and retaining more married men of ability and scholarship in the profession. In the State of Washington, and perhaps Oregon, something has been done of late years in building such homes. Let us have this good law upon the statute book in Pennsylvania.

## NEW LEGISLATION.

THE following acts of interest to the schools have been passed by the Legislature and approved by Governor Sproul:

An act to remove the prohibition against the levying of taxes or incurring of debts for certain purposes while any proceeding for a change of boundary lines affecting any school district is pending. No. 18.

An act authorizing and empowering the State Board of Education to make purchases and sales of real estate and other property for normal schools purchased by the state, and prescribing the disposition of the proceeds of any such sales. No. 59.

An act authorizing and requiring all boards of school directors to pay from the district funds to the teachers employed in the public schools of the several districts four dollars per day for each day's actual attendance upon the sessions of the annual teachers' institute. No. 45.

An act authorizing the board of school directors of each district to appoint from among their number one delegate to any state convention or association of school directors held within the Commonwealth. It shall be the duty of such delegates to attend the meetings of the convention or association, and each delegate so attending shall be reimbursed for all necessary traveling and hotel expenses actually incurred. Such expenses shall be paid by the treasurer of the school district, in the usual manner, out of the school funds of the district, upon the presentation of an itemized verified statement of such expenses. No. 44.

An act requiring that every child having a legal residence in this Commonwealth, between the ages of eight and sixteen years, shall attend a day school in which the common English branches provided for in this act are taught *in the English language;* and every parent, guardian, or other person, in this Commonwealth, having control or charge of any child or children, between the ages of eight and sixteen years, is required to send such child or children to a day school in which the common English branches are taught *in the English language;* and such child or children shall attend such school continuously through the entire term, during which the public elementary schools in their respective districts shall be in session: Provided, That the certificate of any principal or teacher of a private school, or of any institution for the education of children, in which the common English branches are taught *in the English language,* setting forth that the work of said school is in compliance with the provision of this act, shall be sufficient and satisfactory evidence thereof. Regular daily instruction in the English language, for the time herein required, by a properly qualified private tutor, shall be considered as complying with the provision of this section, if such instruction is satisfactory to the proper county or district superintendent of schools: Provided further, That the board of school directors in any district of the fourth class may, at a meeting held at any time before the opening of the school term, reduce the period of compulsory attendance to not less than seventy per centum of the school term as fixed in such district, in which case, however, the board of school directors must, at the same time, fix the period for the compulsory attendance to begin. No. 46.

A joint resolution providing for the appointment of a committee to investigate the public school system and the administration and distribution of the appropriation therefor, and making an appropriation. No. 548.

An amendment giving to school directors of one district the right to acquire and dispose of real estate in another district for school purposes. No. 506.

An act authorizing township school districts to acquire land in a city or borough which it entirely surrounds, and to erect buildings thereon for high school purposes, etc. No. 508.

An act giving county and assistant county superintendents $500 annually for traveling expenses, to be paid in ten monthly installments, beginning September 1, 1919. No. 637.

A bill providing that teachers compelled to be idle during the closing of schools due to epidemics shall be paid for the time thus lost. No. 883.

A bill providing that school teachers'

salaries may be increased at any time deemed advisable and a new contract entered into. The bill validates any increases made without previous contracts being cancelled. No. 906.

An act fixing September 28th as Frances Willard day in the public schools. No. 1094.

An act fixing the salary of the State Superintendent of Public Instruction at $12,000. No. 1125.

An act authorizing school directors to furnish necessary food, clothing and transportation to pupils attending Open Air Schools. No. 1168.

## THE RED BOOK: NO. SEVEN.

THIS volume of proceedings of the Pennsylvania State Educational Association for 1918, which was held at Harrisburg during the last two days of 1918 and the first two of 1919, is issued in the same style as the former volumes and contains nearly five hundred pages.

The enrollment was quite beyond that of any former meeting, reaching a total, as reported by Supt. John C. Wagner, Treasurer, of eighteen thousand, three hundred and twenty-six (18,326). This includes 301 enrolled in the Department of School Directors.

The enrollment of teachers for 1918 is about forty-one (41) per cent. of the number employed in the public schools. For the current year, 1919, we should make it at least fifty per cent.

The enrollment in the Directors' Department includes many of the best school officials in Pennsylvania. It has been slowly but steadily increasing, but has not at any time been large. At the late meeting it reached highwater mark at 301, the number last year being 275. The bill recently passed by the Legislature in the interest of the schools, through increased membership in this department—which has been signed by the Governor and is now a law—should greatly increase this number of directors. Especially should the number of secretaries of fourth class districts be increased. There are nearly twenty-six hundred school districts (2,588) in Pennsylvania. This law authorizes and encourages each school board to send one delegate to this annual meeting of the Directors' Department at the cost of the school district. It ought to add a thousand members next year. And what an influence that should be, from the side of increased interest, in the better administration of our school affairs! Are we on the verge of a great awakening?

Most reports of proceedings that carry their year upon the cover are soon regarded as being out of date, like a last-year's almanac. Not so this one—which is a symposium of educators. It should be in the library of the school. It should lie upon the desk of the teacher. It should attract the advanced and thoughtful pupil. It should suggest ideas, plan and purpose—something new and interesting and profitable—and that for many years and to many people. Thoughts and suggestions out of this book should go down to other generations—for there are many deep-souled teachers who will read here and grow wiser. And because of it they will teach more wisely the grandchildren of the pupils now before them.

In his recent book "Christ as a Teacher," published by the Stratford Company of Boston, Dr. John W. Wayland says, "Are we not seeking to-day for teachers who can take the old books, the old subjects the old truths and through them vitalize the curriculum? It is some years since any one has discovered a really new subject; it is some ages perhaps since any one has coined a new truth. Our chances for discovering new matter are not as promising as they might be; we must rely mainly on finding new teachers—teachers with new vision, new power—who can take the matter we have and vitalize it in the life we must live. Teachers who can do this are in demand. In company with the Great Teacher we discover hidden treasures, we find pearls of great price, we hear wind music, we taste sweet waters of life, we walk in a great light, we enter a house of many mansions. Clothing simplicity, adorning directness, enforcing illustration, expanding with progress, justifying repetition, enhancing adaptation, the beautiful is ever at the right hand of the true teacher, a winsome hand-maiden of truth."

To make the book more valuable, especially upon the desk of the rural teacher and the teacher in the village or the smaller town over which the hollow shell of stars rolls on in visible glory all through the night, we have added a star list that should "lure to brighter worlds and point the way." This is printed from plates made many years ago. These add nothing to the cost of the book, but only to its value in the hands of the growing teacher. It may be our last chance to do this—the gratitude of Bishop Warren is here recalled for what a wise teacher taught him, when a mere child, of the starry heavens—and we are grateful for the opportunity of passing to other hands a torch whose living light has so long gladdened our own life.